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USSR Report

AGRICULTURE

No. 1349

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PREPARATIONS FOR 1982 GRAIN CROP IN KAZAKH SSR

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 1, Jan 82 p 44

/Article: "Attention for the Winter Fields"/

/Text/ In the articles by N. Plotnikov (Issue No 9 of the journal for 1981) entitled "Attention for the Winter Fields," N. Dyadik, V. Sevast'yanov and I. Dubrovskiy "Winter Fields of Kustanay" (Issue No 8 for this year), it was stated that winter wheat plays a substantial role in the republic's grain balance. The principal area for the sowing of this crop is located in Alma-Atinskaya, Dzhambulskaya, Taldy-Kurganskaya and Chimkentskaya Oblasts.

However, studies carried out over a period of many years at the Kustanay Experimental Station and the oblast support base of the Mironovo Scientific-Research Institute for the Breeding and Seed Production for Wheat have proven that winter wheat can be cultivated on a profitable basis in northern Kazakhstan.

The authors of the articles, citing examples and facts, reveal the great effectiveness of use of highly productive varieties of winter wheat. This includes the earlier regionalized Bezostaya 1, Dneprovskaya 521, Krasnovodopadskaya 210, Mironovskaya 808 and the new varieties (of the intensive type) -- Bogarnaya 56, Odesskaya 66 and Prikumskaya 36.

Here is what the chief of the Grain Crops Department of the Main Farming Administration of the Kazakh SSR Ministry of Agriculture, G.V. Zverev, had to say regarding the articles which appeared in the journal. "The problem raised in these articles" he stated, "is a vital one and it must be solved on an all-round basis. Truly, there have been instances wherein the seedlings of winter crops were destroyed by frost in the northern oblasts of the republic. And in the southern regions the insufficient and unstable moisture conditions, which were accompanied by frequent droughts, dry winds and dust storms, also lowered the cropping power. But the chief factor had to do with the unsatisfactory and obsolete agricultural practices employed in the cultivation of winter wheat. And in those areas where the elements were countered by scientifically sound agricultural practices and a high level of expertise on the part of the farmers, all of the agricultural measures recommended by science for the zone were carried out in a timely and high quality manner and fine yields obtained. Thus wheat was sown following well tilled fallow at the Kaskelenskiy Sovkhoz in Alma-Atinskaya Oblast. The entire complex of operations was carried out in a high quality manner and during the best periods. As a result, during the past autumn an average of 16.7 quintals of grain per hectare was harvested from the winter crop fields, twice as much as that obtained from winter crops sown following non-fallow predecessor arrangements. In Chimkentskaya Oblast, according to data supplied by the Krasnovodopadskaya Station, the yield of Krasnovodopadskaya 210 winter wheat, following bare fallow and a bed of perennial grasses and with the required amount of fertilizer being applied, was 64 quintals and following stubble predecessor arrangements -- 23 quintals per hectare.

Last autumn the machine operators encountered rather complicated conditions during the autumn plowing period. The dried out earth was not tilled very well using sweeps. A portion of the windbreak strips on fallow fields perished and this certainly exerted an adverse effect with regard to snow retention. Nevertheless, many farms in Alma-Atinskaya, Taldy-Kurganskaya, Chimkentskaya, Dzhambulskaya and Vostochno-Kazakhstanskaya Oblasts carried out their winter crop sowing work in a fine manner. And this year the collectives of the Presnogor'kovskiy, Rossiya and Pobeda Sovkhozes, the Kolkhoz imeni K. Marks and others in Kustanayskaya Oblast successfully coped with their winter crop sowing operations. During the autumn sowing period, special attention was given to the optimum periods for carrying out this work, to the correct application of the required amounts of fertilizer and to the seed sowing norms. The seed and mineral fertilizer dosages were applied taking into account the planned yields.

In past years, many farms in Kustanayskaya Oblast were late in preparing their soil for the sowing of winter crops and subsequently they carried it out in haste on non-packed soil. This lowered the winter wheat yields. Unfortunately, at the commencement of the sowing work this year similar work was observed being carried out at a number of sovkhozes and kolkhozes in Alma-Atinskaya and Taldy-Kurganskaya Oblasts. And the fact that the situation was rapidly corrected will undoubtedly produce positive results.

The authors of the articles are completely correct when they state that the sowings of winter wheat should be expanded in order to increase grain production throughout the republic, since such sowings are most productive (especially on irrigated lands). Meanwhile, spring grain crops (together with corn) occupy 55 percent of the sowing areas on irrigated fields. This is irrational. The structure of the sowing areas should be improved by reducing the sowings of low productivity crops and expanding the areas used for winter wheat, especially in the southern portion of Kazakhstan. Thus the sowings of annual grasses on farms throughout the republic presently occupy 77,000 hectares and in tne south and southeast -- approximately 20,000 hectares. The sowings of winter wheat can be boldly increased by 75,000 hectares by decreasing the sowings of spring crops and annual grasses. This will furnish no less than 100,000 additional tons of grain.

The structure of the sowing areas should be examined thoroughly during the winter and the amount of fallow and winter wheat included in it taken into account. It is now that the farms must establish a strong foundation for obtaining a good harvest of this crop.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PROGRESS OF LITHUANIAN PLANTING REPORTED

Vilnius SOVETSKAYA LITVA in Russian 15 May 82 p 1

[Article by A. Simaytis, chief of the farming administration of the Lithuanian SSR Ministry of Agriculture, and V. Barbashin: "Clean Plantings--Large Yield"]

[Excerpts] It is as though a velvet carpet has covered the fields. The winter crops are gathering strength, and the spring grain crops have begun to grow vigorously, gladdening the heart of the farmer. But he has many concerns. The soil has now dried out in the lowlands, in the marshes and near the ditches--and they must also be planted more rapidly in order that not a single inch of land be wasted, in order that each clump works for the people. The time has come for mass planting of corn. Each minute is valuable now. It is necessary to replant the winter crops that have perished and have become thin with grain crops as quickly as possible.

The farmers have passed their examination in spring planting with honors. They conducted it in an organized way and at the best agrotechnical times. Now the second stage of the struggle for a large harvest has come--caring for the planted areas. This is also an important and responsible task. The services for reporting predictions and the plant protection posts are reporting that this year, when the soil is well warmed and moist, they expect very intensive and rapid growth of wheat. This circumstance makes it necessary to pay special attention to the fight against weedy grasses, pests and diseases of plants. The means of waging the struggle are good--both mechanical and chemical.

There is a great deal of concern for winter crops as well. The areas planted in them are being sprayed with TUR-CCC Fundazol with a mixture of herbicides. This measure works actively against lodging of winter crops. The seed sections for clover are being attended to as well. In order to protect them from pests, the areas whose plants have reached 10 meters in height have been treated with pesticides.

The work of the kolkhoz and sovkhoz agronomists is reflected in the clean planted areas as in a mirror; their concern for the crops is evident. It is very offensive to see how certain farms are not devoting the proper attention to fighting against weeds, since they draw moisture and nutritive substances out of the soil.

The farms of the republic are receiving a large quantity (approximately 70 tons) of Ridomil for the first time this year. This is a very effective means of fighting against phytophthorosis, which contributes to increasing the productivity of

Table. Progress of Spring Crop Planting on **Farms of Lithuanian SSR as of 13 May 1982**
(% of fulfillment of plan)

Rayons	Total planted in spring crops	Including: Potatoes	Vegetables	Corn
A	1	2	3	4
Total for republic	91	89	63	31
Akmyanskiy	92	94	56	16
Alitusskiy	95	99.1	92	47
Anikshchayayskiy	88	89	85	14
Birzhayskiy	87	100	80	19
Varenskiy	97	100	95	35
Vilkavishkskiy	86	100	44	24
Vil'nyusskiy	90	88	62	39
Zarasayskiy	92	81	69	18
Ignalinskiy	91	68	95	31
Ionavskiy	85	89	61	7
Ionishkskiy	96	100	100	66
Kapsukskiy	90	95	91	37
Kaunasskiy	90	89	55	27
Kayshyadorskiy	89	79	39	29
Kedaynskiy	91	82	55	24
Kel'meskiy	93	81	100	27
Klaypedskiy	91	94	62	48
Kretingskiy	95	100	57	45
Kupishkskiy	87	99.2	89	12
Lazdiyskiy	95	100	56	53
Mazheyskiy	95	97	87	41
Moletskiy	91	88	104	36
Pakruoyskiy	92	100	94	21
Panevezhskiy	87	89	66	23
Pasval'skiy	97	99	93	60
Plungeskiy	97	98	65	29
Prenayskiy	90	84	56	20
Radvilishkskiy	91	95	90	38
Raseynskiy	96	100.1	100	47
Rokishkskiy	87	71	45	8
Skuodasskiy	96	91	95	89
Tauragskiy	94	97	79	25
Tel'shayayskiy	95	92	83	34
Trakayskiy	90	80	49	23
Ukmergskiy	89	91	43	16
Utenskiy	89	69	53	1
Shakyayskiy	90	91	85	25
Shal'chininkskiy	95	100.3	100	31
Shvenchenskiy	82	62	85	28
Shilal'skiy	93	95	100	4
Shilutskiy	93	96	87	34
Shirvintskiy	94	80	81	20
Shyaulyayskiy	94	98	64	50
Yurbarkskiy	94	96	82	46

potatoes up to 100 quintals per hectare. The availability of the chemical will make it possible to treat approximately 75 percent of the area planted in potatoes. But it is necessary to prepare well for extensive application of Ridomil. It is important for each farm to assign people especially for this purpose, to train them, to repair existing sprayers, and also to conclude prompt agreements for conducting this work with aviators of the Sel'khozkhimiya association.

There is much to do these days on sugar beet plantations. This year on the farms of six rayons of the republic the sugar beets on an area of 5,000 hectares are being cultivated with industrial technology. Weeds cannot be allowed to appear here either. This is precisely the way the work is being done on the Baryunay and Pyargale kolkhozes in Ionishkskiy Rayon, the Kolkhoz imeni Kapsukas in Kapsukskiy Rayon, and the Kolkhoz imeni Antanas Snechkus in Kedaynskiy Rayon, where the sugar beet plantations were harrowed twice before the shoots appeared and there is no weedy grass.

When subsequently tending the areas planted in sugar beets one should devote attention to better utilization of thinners. By using them in the cultivation of sugar beets it is possible to cut expenditures of manual labor in half. But, as the practice of past years has shown, many farms of Birzhayskiy, Kupishkskiy, and Pakruoyskiy rayons have failed to use a considerable proportion of the thinners. This cannot be allowed this year.

Such labor-intensive work as gathering rocks cannot be put off until later either. On many farms of Kupishkskiy and Birzhayskiy rayons many older school children, patrons and residents of local villages have been enlisted in this work. Each of them has been given specific assignments. The people have been engaged in this work throughout the week and not only on Saturdays and Sundays. The practice is worthy of dissemination.

The farmers have a great deal of work these spring days. All of it is important and immediate and it all must be done comprehensively.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CROP PROGRESS, WEATHER CONDITIONS IN KUSTANAYSKAYA OBLAST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 May 82 p 1

[Article by V. Vedenko (Kustanayskaya Oblast): "Major Test"]

[Text] The chief agronomist of the oblast administration of sovkhozes, Nikolay Kuz'mich Detkin, has been working on the virgin land for many years but he does not recall two springs that were the same.

"The peculiarity of this spring," he says, "is the unusually warm weather. Even in April the temperature was almost 30 degrees centigrade. And once again nature set a task for the grain growers."

Last year's dry spell and the small amount of snow during this past winter undermined all the plans of the farmers. It was necessary to retain the residuals of moisture in the soil. And this was done quickly and well in the oblast. The clumps of snow had to be broken apart especially carefully.

"The earth is very dry," the director of the Sovkhoz imeni XXIII s"yezda KPSS in Fedorovskiy Rayon, A. Perevoznyy, was distressed. "Now the struggle for a large crop will depend on us ourselves, on our ability."

They have prepared for difficulties in the oblast. All the farms have tried to accumulate as much snow as possible on the fields and to do a better job of preplanting cultivation of the soil. Special attention was devoted to seeds. This year their quality is better than ever before. Almost 53 percent of the wheat seeds are of the first class and the rest are of the second class. The seed material for planting forage crops is not quite so good.

"What you plant, so shall you reap," goes the saying. But now the farmers frequently add the following words: "How you plant." Good seeds are ceasing to be a problem. But how to plant them, how to solve those very problems of which, it appears, nature on the virgin land has an endless supply--this question is much more complex. It is not accident that this year the oblast has organized weekly training of agronomists and administrators of the sovkhoz divisions on the basis of the Kustanay Agricultural Institute. And brigade leaders and machine operators have been studying at the local branch of the Tselinograd Scientific Research Institute of Mechanization and Electrification of Agriculture. There was also a meeting of masters of large crops.

This year the oblast will have to plant a total of almost 4.5 million hectares in grain crops. Calculations confirm that the field work can be done at the optimal times. The farms are well equipped. About 770 mechanized complexes were created for the period of planting work. They have 6,350 of Kirovets tractors alone. During the year this fleet will be increased by 356 machines. They also have enough harrowing and planting implements for them. Moreover, 9,500 Kazakhstanets caterpillar tractors have been included in the work. The farms have been provided with fuel, but there is still a shortage of lubricants during this busy planting time.

The grain growers have serious complaints againsts the chemists of Chimkent and Dzhambul. They are not delivering enough phosphorus fertilizers. This year fertilizers will be placed in the rows along with planting on an area of 1.3 million hectares. This is 200,000 hectares more than last year, but still it is not enough. For local application of fertilizers produces an additional yield of 3-5 quintals per hectare.

Kustanavskaya Oblast, the republic's main granary, has begun planting wheat. Thousands of tractors have gone out onto the fields. Since the first day the machine operators have engaged in competition for high rates and high quality of work.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PROBLEMS IN FERTILIZER DISTRIBUTION, APPLICATION IN BASHKIRIA

Moscow PRAVDA in Russian 8 Jun 82 pp 1-2

[Article by N. Mironov: "From the Plant to the Field"]

> [Text] Farmers of Bashkiria have a large planted area: about 5 million hectares. To sell the state 2.7 million tons of grain, 1.5 million tons of sugar beets, 60,000 tons of sunflower seeds, a large quantity of potatoes and other products--such are the commitments made by agricultural workers of the republic in the second year of the five-year plan. Responding to the decisions of the May (1982) Plenum of the CPSU Central Committee with deeds, they are striving to increase the fertility of each hectare as well as the output. In order to conduct this work, the kolkhozes and sovkhozes are placing great hope in assistance from their partners --the chemists.

Enterprises of the republic deliver a considerable proportion of the mineral fertilizers to the kolkhozes and sovkhozes of Bashkiria. This autumn, for example, when the seeds were planted fertilizers were applied to the rows on an area of 2,870,000 hectares.

Many farms have learned to apply fertilizers well. Take Ilishevskiy Rayon. Farmers here are utilizing fertilizers skillfully and increasing the return from each hectare according to a developed program which includes a complex of organization and technical measures.

Questions of organizing competition and new forms of labor and wages as well as advancing the art of farming are regularly considered at meetings of communists, party-economic aktivs and plenums of the raykom. The farms have established strict control over correct distribution of crops in the crop rotation. Books are kept of the history of the fields, and in them they record, in particular, the quantity and kinds of fertilizers that have been applied.

It is not a simple matter to observe all these rules. This requires concern, attention and control. Not everyone can handle this immediately.

"We are trying to conduct organizational work so that each farm will immediately take over everything that is useful in the service of the crop," says the first secretary of the Meleuz party gorkom, A. Sharafutdinov. "Incidentally, you can see this for yourself . . . ."

While we were going to the Novyy put' Kolkhoz here Adgam Ganeyevich discussed in detail how the farms will prepare and utilize chemicals. During recent years in Bashkiria, as in many other regions of the country, special attention has been devoted to liquid compound fertilizers.

Meleuz farmers are also actively using the innovation. But why, I thought, should the kolkhozes have such "independence" that they mix the various components themselves. After all, next door (we shall consider this a fortunate combination of circumstances) is the plant. And not simply a plant, but the very one which has been instructed to assimilate the production of liquid compound fertilizers this year.

Of course the plant will not supply the "elixir of fertility" only to the farms of Meleuzovskiy Rayon and not only to Bashkiria. But help should come more quickly to those fields which begin literally behind the area of the enterprise.

But the application of liquid fertilizers is a complicated agrotechnical device. It is necessary to be able to handle it and to have the necessary equipment at one's disposal.

When we arrived at the Novyy put' the machine operators were not working.

"Why are you standing around?" asked Sharafutdinov.

"Something is wrong with the solution . . . ."

The ammonia water turned out to be in the wrong concentration. It would not be difficult for a chemical engineer to handle this. But so far the farm does not have such specialists.

Meleuzovskiy grain growers complained that they did not have the necessary volume of compound fertilizers. So far the farms receive only the constituent parts of them. They are supposed to produce up to 500 tons of liquid compound fertilizers a day with homemade equipment. They have equipped 62 trucks to bring ammonia water here from Salavat and phosphoric acid from the neighboring plant. Farms have 56 containers with an overall volume of 500 cubic meters for accumulating and storing fertilizers as well as 75 machines for applying them to the soil. Classes have been held with the head engineer and agronomists of the farms on "the properties and technology of application of liquid compound fertilizers." In a word, special knowledge and practical skills are required. It turns out that the training of these personnel has become, perhaps, primary in Sel'khozkhimiya and on the farms. Still the question involuntarily arises: are the farmers really up to this, is it really their duty to engage in this work with primitive methods?

"Of course not," says the director of the Meleuz plant, M. Kashapov. "We should be delivering compound fertilizers. But this year we will be manufacturing only 30,000 tons of them. This is not very much at all. True, we shall increase their output in the near future."

Mansay Garafovich decided not to discuss the actual prospects of such an important industry in any greater detail. There are reasons for this. For instance, today the plant produces mineral supplements to concentrated feeds for livestock as well as other products. But it does not have the components necessary for preparing them. The enterprise is constantly experiencing a shortage of phosphorus. The equipment is not working at full capacity. At the same time there are not enough technical capabilities for delivering to the field workers liquid fertilizers that are already prepared, with the necessary concentrations and proportions.

There are interruptions in the deliveries to the enterprise of paper sacks for the products. The lack of packaging is not just a problem for the Meleuzovskiy farmers. It is known that a good deal of fertilizers are lost while they are being shipped from the plant to the fields. They go through more than one "diversion" on this path. Moreover, they are frequently shipped in bulk, and their weight is determined by eyesight. The farmers receive them in exactly the same way: the kolkhozes and sovkhozes have no equipment for weighing loaded KamAZ's. Frequently the farms are waiting for the fertilizers and they are standing in the railroad cars. The unloading is done extremely slowly. In just two months of this year the Bashkir Sel'khozkhimiya association paid 160,000 rubles in fines for idle time of railroad cars.

There is a difficult situation at the Salavatnefteorgsintez combine as well. Last year it failed to deliver to agriculture 221,000 tons of nitrogen fertilizers. The equipment here is far from perfect according to today's standards.

But that is not the only factor that impedes the rhythmic operation of the enterprises. Mountains of undelivered carbomide are accumulating on the plant's territory. It is not only the fields of Bashkiria that are waiting for this product. Because of the lack of covered cars, the plan for shipment is regularly underfulfilled.

How does one avoid losses of fertilizers during shipment from the plants to the field. The opinions of specialists of kolkhozes and sovkhozes and economic agencies differ sharply. In the Sel'khozkhimiya association they think that it is necessary to create large warehouses at the loading stations. They have already begun to be constructed in Tuymazy and Yanaul. The managers of the rayon agricultural administrations think that these warehouses should be closer to the fields and that one of them should be constructed for every three or four farms. The kolkhozes, when possible, have already provided themselves with their own storehouses.

No unified strategy has been developed so far. And this is perhaps the greatest impediment. Fertilizers are frequently redispatched from one recipient to another, and with each such transhipment their weight decreases and their quality deteriorates. It is necessary to have a clearly thought-out system of distribution of storehouses that precludes excess transhipments. Who is capable of this? The

Sel'khozkhimiya service, whose work now, as was noted at the May Plenum of the CPSU Central Committee, will be evaluated not only for the rendering of services, but also for the achievement of final results of agricultural production.

So far the operation of the associations is evoking quite a few complaints. In a recent inspection conducted by the Bashkir ASSR peoples' control committee showed that the trucks intended to transporting fertilizers from the railroad stations are not being used for this purpose. They have not organized 24-hour unloading of fertilizers. The repair of the specialized technical and transportation equipment is poorly arranged.

Sel'khozkhimiya is not receiving enough equipment for applying fertilizers. And the farms are not receiving any of this equipment at all now.

Sel'khozkhimiya enterprises are applying fertilizers to only 150,000 hectares. And the volume of work will hardly be increased in the near future. But who will apply the fertilizers to the rest of the area?

"The kolkhozes and sovkhozes cannot be dismissed from this work. Their agronomists should decide how many and what kinds of fertilizers are to be applied to the fields," says the republic minister of agriculture, A. Aminev.

The new administrative agencies in rural areas are the agro-industrial associations which are being created by a decision of the May Plenum of the CPSU Central Committee. They should be concerned about motivating Sel'khozkhimiya workers to achieve good final results from the labor of the farmers. It is also important to clarify the rights and responsibilities of this service. They should know what to do where. And so one ends up with a paradox. Fertilizers are to be applied by the kolkhoz machine operators, but they do not receive the appropriate technical equipment for these purposes.

The assortment of fertilizers is small. There is a surplus of potassium fertilizers and not enough phosphorus fertilizers. The balance of nutritive substances in the soil is being violated. This was discussed by the chairman of the Put' Lenina Kolkhoz in Aurgazinskiy Rayon, N. Aksakov. The amount of acid soil on the farm has increased significantly in recent years since the wrong doses of mineral fertilizers have been applied. Now the fields have to be limed.

Party and soviet agencies of the republic should devote more attention to problems of increasing the fertility of the soil. Everything is important here: the form in which the fertilizers are loaded onto the cars, the way they are received at the station, and when and how much of them are applied. The principle "Kasha cannot be spoiled with butter" does not apply here. It is necessary to observe strictly the rules of agrotechnology. This will make it possible to increase the productivity of the fields and make a worthy contribution to the solution to the country's food problem.

11772
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MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN FIELDS EXPANDED IN URAL AREA

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 7 May 82 p 1

[Article by A. Knysk, chief ot he oblast agricultural administration (Ural'skaya Oblast): "Grain Fields Expanded"]

[Text] Field work has begun on a broad front on the fields of the Ural area. Farmers of the oblast, having entered the all-union socialist competition for increasing the efficiency of production and improving the quality of work and providing a worthy greeting to the 60th anniversary of the founding of the USSR, have adopted high socialist commitments.

More than 1.8 million hectares will be planted in grain crops in the oblast this year, and about 1.6 million hectares of these will be in spring crops. The areas planted in grain crops for this year's harvest will be increased by 322,800 hectares.

The supplies of moisture in the soil on fall plowed fallow by the beginning of spring field work were somewhat less than last year. Therefore all agrotechnical measures are now being directed towards conducting the planting in reduced time periods. The Ipatovo method and the organization of competition among mechanized detachments and teams will contribute to this.

We are devoting special attention to the quality of the field work. Peoples' control posts, the "Komsomol search light," and deputy and party groups are operating everywhere.

Soil protection technology for cultivating grain crops using SZS-2.1 stubble seeders has become widespread. They do four kinds of work in one trip--cultivation, planting, application of fertilizers and rolling. This year this method will be used to plant 80 percent of the area of spring grain crops.

This year farmers of the oblast are devoting a great deal of attention to efficient utilization of mineral fertilizers. They are being applied to the rows along with planting. Under the conditions of the Ural area this agrotechnical device produces a great economic effect and provides for an additional grain yield of 1.5-2 quintals from each hectare. This method will be used to plant grain crops on an area of 100,000 hectares or almost twice as much as last year. But it must be noted that the farms of the oblast are experiencing a critical shortage of mineral fertilizers.

During the period of spring planting a great deal of attention is being devoted to fighting against wild oats--that evil weed of grain crops. On all the fields where these weeds are growing a complex of agrotechnical devices developed by scientists of the Ural Agricultural Experimental Station is being conducted to fight against them. This makes it possible to reduce the weediness of the fields considerably.

The winter fields, which amount to 346,000 hectares in the oblast, are a subject of special concern for the specialists of the kolkhozes and sovkhozes.

One of the reliable reserves for increasing the gross yields of grain is expansion of the planted areas. We are faced with a task: to increase them to 2.2 million hectares under the Eleventh Five-Year Plan. All of the rayons and farms already have their assignments for further increasing the planted areas.

Farmers of the oblast, supporting the patriotic initiative of the Severo-Kazakhstanskaya workers--the initiators of the republic competition for exemplary preparation and organization of spring planting--are conducting the field work at a rapid rate and striving to complete it in reduced time periods, on a high agrotechnical level, and to lay a firm basis for the harvest.

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GRAIN CROPS PLANTED IN TSELINOGRADSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 23 May 82 p 1

[Article by A. Kostyukov (Tselinogradskaya Oblast)]

[Excerpts] About 600 sets of planting equipment have gone out onto the fields in Tselinogradskaya Oblast where grain crops occupy more than 3 million hectares.

Other farms of the oblast are also expanding the areas planted in grain crops this year by assimilating new land and improving the structure of the planted areas. Atbasarskiy Rayon is planting 28,000 hectares more than last year, Krasnoznamenskiy --24,000 hectares more, and Yermentauskiy--20,000 hectares more. Throughout the oblast the increase will be more than 200,000 hectares. This is equal to the planted area in a large grain rayon.

The additional hectares will produce additional yields of grain, of which Tselinogradskaya workers will deliver no less than 2,130,000 tons to the state this year. But to do this it will be necessary to carry out a large volume of work. The first days of planting showed that the seeds will be placed in the soil at the optimal times. Therefore the farmers are now more concerned about the quality of seeds. Spring came to the virgin land early and even by the end of the first 10 days of May there was no more cool spring weather. Since that time the sun has been June sun.

The early heat helped the farmers to clear the fields of weeds better than in past years. But at the same time there arose the danger of losing moisture. Supplies of it are decreasing each day. This makes two basic requirements primary for agrotechnical tactics: first, to plant the seeds at a significant depth so that they will be in moist soil; second, to reduce the interval between preplanting cultivation and planting to a minimum. Not all of the farmers are working at night, which is especially favorable for preparing the soil. Both in the brigade camps and the distant camps these days one can still see sets of equipment standing idle because of breakdowns. The necessary living conditions have not been created at all the field camps so that the machine operators can eat promptly, rest well and not lose time of trips home.

The farms are conducting an extensive agronomical investigation of local farming technologies. To this end, the oblast has set a task: to have an experience field agronomist on each sovkhoz and kolkhoz. Many of them already have "testing grounds" for testing the innovations of agrotechnology and selection. In Astrakhanskiy and a number of other rayons the experimental work of the agronomists is being included in the plan. Each of them arranges experiments on his particular subject, and then reports the results that have been obtained at the rayon agronomical conference. It is becoming a practice for the workers to defend the plans at rayon agronomical councils. It is now necessary for the agronomist to "record" the technology of the field work, beginning with the methods of cultivation and ending with the norms for the planting of seeds. Now this technology is undergoing testing on the spring fields. Tselinogradskaya workers have planted the first million hectares in grain crops.

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MAJOR CROP PROGRESS ANDWEATHER REPORTING

CROP PROGRESS, WEATHER CONDITIONS IN KOKCHETAVSKAYA OBLAST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 May 82 p 1

[Article by G. Maslov (Kokchetavskaya Oblast): "Multiplying the Force of the Field"]

[Text] On this cold April day the Square imeni Vladimir Il'ich Lenin in Kokchetav shown red with calico, and one could hear the music and songs with which the Komsomol-50's went to storm the virgin lands. On the banners were the following motto: "Produce, young virgin land." After a short meeting the consolidated convoy of tractors headed toward Valikhanovskiy Rayon. Thus the mass attack on the solonets soil began in the oblast. Its assimilation was declared to be a shock front by the oblast Komsomol organization.

"There are more than 3 million hectares of less productive solonets land on our farms, including 1.3 million hectares of arable land," says the deputy chief of the oblast agricultural administration, N. A. Barabash. "It is no accident that today this is being called the 'young virgin land.'" The assimilation of this land is a very labor-intensive, but also an affective business. As the practice of our farms shows, reclaiming solonets land increases the yield from the land 5-10-fold. This year Kokchetavskaya farmers will have to "capitally repair" no less than 100,000 hectares of arable land, which is more than the assignment than was given to the oblast. The forces are not being dispersed in any of the rayons, but are being gathered together into a single fist--specialized mechanized detachments. And in order to render assistance to the Valikhanovskiy workers, who have to cultivate 15,000 hectares of less productive land, a specialized mechanized column of the oblast Sel'khozkhimiya association has been created. The task that has been set is to plant and harvest grain and other crops from the newly reclaimed land even this year.

Leningradskiy and Leninskiy rayons were the first to fulfill the assignment for the assimilation of solonets land. This work is also being done successfully in Arykbalykskiy, Kellerovskiy, Chkalovskiy and Chistopol'skiy rayons. The assimilation of solonets land the the plowing of old grass fields will make it possible for the farms of the oblast to expand the area planted in grain crops by 100,000 hectares this year.

The spring of the second year of the five-year plan is marked by many other good signs in the oblast. Above all, they are clearly following a line toward more extensive utilization of the achievements of science and advanced agricultural practice. Take such an important question as the introduction of promising new strains of grain crops. For many years Saratovskaya-29, which is known for its high bread baking qualities, has worthily prevailed on the fields of the virgin land farms. It still occupies a large proportion of the planted areas. But since the end of the past five-year plan the grain growers have been allotting more and more space to such strains as Omskaya-9 and Tselinnaya-21, and since last year--to Almaz. In terms of their productive force they are as good as their celebrated predecessor, and in terms of productivity they exceed it in certain years by 3-4 quintal. The promising strains will now be planted on almost 690,000 hectares. This is 34 percent of all the area allotted for wheat, and 12.4 percent more than was allotted last year. In certain rayons the proportion is even higher. In Valikhanovskiy Rayon, for example, it amounts to 69 percent, and in Chkalovskiy, Chistopol'skiy, Leningradskiy and Kzyltuskiy rayons--from 37 to 54 percent.

The greater productivity has opened the doors to the fields for such strains of barley as Donetskiy-8 and Tselinyy-5. The areas planted in them is being almost doubled and will amount to 40 percent of the entire area planted in this forage crop. And in Kuybyshevskiy, Kokchetavskiy, Shchuchinskiy and Zerendinskiy rayons their proportion will be from 63 to 80 percent.

"Under the conditions of our farm, Tselinyy-5 barley has produced more than 6 quintals per hectare more than Omskiy-13709 for a number of years now," says the head agronomist of the Zlatopol'skiy Sovkhoz, V. G. Lyuft. "Just as a result of this, we have obtained about 16,000 additional tons of grain in four years."

It is known that the most productive strains manifest their whole force only against a good agricultural background. Therefore they are planted after the best predecessors in the oblast. More than 2.1 million hectares of fall fallow and 563,000 of well prepared clean fallow have been allotted to grain crops and corn. About 85 percent of the seeds of the grain crops meet the requirements of the first and second classes of planting standard. This is a reliable basis for the 1982 harvest.

Virgin land is very responsive to mineral fertilizers. We are receiving more and more of them. This year they will be applied to 1 million hectares, including 757,000 hectares on which the fertilizers will be placed in the soil along with the seeds. This is considerably more than last year. But still we do not have enough mineral fertilizers this year. The farmers are compensating for the shortage of them with organic fertilizers. Four million tons of humus are being shipped onto the planted area--600,000 tons more than the average annual amount applied under the Tenth Five-Year Plan. This early and dry spring was a serious test of the mastery of the virgin land farmers. The wild oats, tatar buckwheat and other weeds came up early and vigorously this year. They were quickly destroyed with interim cultivation. Only after this did the farms of the hilly mountainous zones, which felt the effects of the early spring frosts more severely than others, begin test planting. After 15 May all the kolkhozes and sovkhozes of the oblast had begun this. There were 3,600 specialized teams joined together into 755 planting complexes that went out onto the fields.

Today every worker of Kokchetavskaya Oblast lives for news from the front of the field work. And this is understandable--grain has been and still is the oblast's main wealth. And the virgin land farmers are doing everything possible to gladden the homeland with a large amount of grain during the second year of the five-year plan.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVEST OPERATIONS IN MOLDAVIAN SSR

Moscow SEL'SKAYA ZHIZN' in Russian 15 Jul 82 p 1

/Article by N. Marfin, Moldavian SSR: "The Grain Yield Provides An Evaluation"/

/Excerpts/ The leader of the specialized crop rotation Kolkhoz imeni Suvorov, S.T. Koroy, withdrew several spikelets from a windrow of winter wheat. They were small in size, but the grain was large and full.

"This year, despite the fact that our Budzhakskaya Steppe region did not have any rain for almost 2 months" stated Semen Tikhonovich, "the grain fields were nevertheless generous. Commencing with the very first gang-mows, we obtained 35 quintals per hectare and we expect to obtain an average of not less than 40."

This high figure was not just drawn from thin air -- the yield was determined to be such by the specialists. But everything is now dependent upon the periods and quality of the harvest work.

At the neighboring Put' Lenina Kolkhoz the tasks aee also being fulfilled and overfulfilled on a daily basis.

At both of these farms, thought was given in advance to the busy harvest campaign that crowns the work of the farmers. Thought was given as to which varieties to plant on the winter fields such that there would be minimal expenditures of manpower and resources, more grain obtained and less losses sustained. And both here and there, changes were introduced into the crop structure. For example, on the wheat fields, in addition to the widely used high-yield Odesskaya-51, the less intensive but more lodging resistant Zaporozhskaya Ostistaya variety and the non-shattering Pitikul were sown. Such a selection of varieties having different quality characteristics makes it possible to regulate better the wheat harvesting priorities and schedules, depending upon the prevailing and specific weather conditions.

The crop structure is improving in all areas. A noticeable increase has taken place in the areas set aside for such high yield locally bred varieties of winter barley as Yarna, Start and Odesskiy-46 and an increase of almost twofold in the areas set aside for peas. "Despite this expansion in the spring fields" commented the 1st secretary of the rayon party committee I.K. Chebuk, "even less time was required for harvesting these two crops than was the case last year -- in all, only 4 working days. This reduction was promoted by a strengthened logistical base, which earlier was the object of special concern by the farms. As a result, the workload per unit decreased by more than 30 hectares compared to last year.

Nevertheless it remained comparatively high. We made use of still another reserve -- the transferring of unit crews from one farm to another. The maneuvering of equipment is being carried out in the neighboring Kagul'skiy Rayon. Here the kolkhozes imeni Kirov and imeni Michurin received assistance from the local Zhemchuzhnyy, Vinogradar' and other sovkhoz-plants.

There is still one other important factor associated with accelerating an improvement in the quality of all work that bears mentioning -- group contracts. In Suvorovskiy Rayon the Volontirovskiy crop rotation program -- three mechanized detachments -- has converted over completely to the use of progressive forms for organization and wages, in Vulkaneshtskiy Rayon -- a number of brigades of the kolkhozes Gigant and imeni Karl Marks and in Kagul'skiy Rayon -- all mechanized detachments of the inter-kolkhoz association for mechanization and electrification.

The principal aim of such a contract -- to achieve the best final results -- promotes higher quality carrying out of all of the technological operations associated with the harvest campaign. Today it is stimulating highly productive labor and organized and efficient interaction by all services during the final stage of the harvest campaign. Wherever one happens to visit, the best results are achieved by the contractual brigades and teams and, as a rule, higher cropping powers.

Six hundred and sixty all-round mechanized detachments throughout the republic have joined in the campaign to harvest more grain. Commencing with the very first days, all teams in the harvest production line have been working at maximum capability. Lively work is being carried out on the routes leading from the fields to the threshing floors and the threshing floors to the elevators. The Kolkhozes imeni Suvorov and Put' Lenina in Suvorovskiy Rayon have fulfilled their tasks for delivering barley to the state and laying in seed and thereafter, without disrupting the flow line, they organized the shipping of forage grain to a mixed feed plant. This is also a remarkable feature of the busy harvest campaign, one which testifies to the zealousness being displayed by the masters of the land. This year, for the very first time in the republic, all of the grain forage resources are concentrated in the same hands -- at the mixed feed plants, state and inter-farm. Here they will be processed completely, enriched with the required additives and shipped to the livestock complexes and factories in conformity with the norms and schedules. This will make it possible to utilize the grain in a more thrifty manner.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVESTING UNDER BAD WEATHER CONDITIONS

Kishinev SOVETSKAYA MOLDAVIYA in Russian 20 Jul 82 p 2

/Article from Selektsiya Scientific Production Association: "Taking Into Account the Peculiarities of the Harvest Season"/

/Text/ Driving rainfall accompanied by squall-type winds has resulted in the lodging of grain and pulse crops over considerable areas in all regions of the republic. If we also take into account the fact that the weeds have grown at an intensive rate owing to an abundance of precipitation, then one can easily understand the difficulties that are being encountered during this present grain harvesting season.

The farm specialists must inspect the tracts repeatedly and hand down specific decisions with regard to the use of different harvesting methods for each field.

Long-stalk lodged grain crops and weedy tracts should be harvested by means of the two-stage method, using for this purpose the ZhRB-4.2, ZhBA-3.5 and ZhVS-6 harvesters equipped with additional reel lifters for raising the lodged plants. In especially severe cases of lodging, use should be made of KZS-2.1 mowing machines equipped with PB-2.1 devices.

In order to avoid losses caused by grain crops becoming overripe while standing, this year (by way of an exception) the majority of the tracts must be harvested by means of direct combining.

The strong and valuable wheats must first of all be cut down and thereafter processed on the threshing floors and stored separately.

When harvesting non-lodged and non-weedy grain crops by means of direct combining, the work should commence with the short stalk varieties and also with tracts having sparse grass stands, since following the precipiation these tracts become quickly overgrown with weeds. Direct combining must be carried out at the lowest possible cutting height, since the straw is of great value as a source of coarse feed.

When harvesting low-growing grain crops, the reel bats of the combines should ideally be reinforced by rubber belts 100-150 millimeters in width. Such additional equipment precludes losses occurring in cut ears from the cutting units of the combines.

For the purpose of reducing losses, the picking up and threshing of windrows during the two-stage harvesting of overripe grain crops is best carried out immediately using PPT-3 fabric-strip windrow pick-ups.

Simultaneous with cutting down the grain crops, the fields must be cleared of straw and post-harvest residues in an efficient manner and the removal of stubble and subsequent operations concerned with preparing the soil for next year's crops must be carried out as part of an overall complex of operations.

The skilful maneuvering of equipment and efficient interaction by all teams in the harvest production line and all those participating in the busy harvest campaign are making it possible to achieve high rates and quality in harvesting the grain crops, despite the unfavorable weather conditions encountered this year.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

GRAIN HARVESTING OPERATIONS HAMPERED BY INCLEMENT WEATHER

Kishinev SOVETSKAYA MOLDAVIYA in Russian 23 Jul 82 p 1

/Article by Yu. Fedorov, Lazovskiy Rayon: "Maneuvering of Equipment -- A Reserve of a Grain Grower"/

/Excerpt/ In accordance with tradition, large harvesting detachments have been created for the 1982 harvest in Lazovskiy Rayon. One of them is cutting down grain crops for the neighboring Progress and Viktoriya OPK's /ob"yedineniye po proizvodstvu kormov; feed production association/. Its structure includes 10 combines, harvesters, motor vehicles and units for the collection and stacking of straw.

The harvest commenced under difficult conditions. No sooner had the equipment been moved out onto the fields than the weather turned bad. Day after day -- rainfall. Today on one field, tomorrow on the other.

The chief of the detachment M. Kazak and Comissar S. Marandyuk invited the leaders and specialists of the associations being served to a consultation. How best to utilize the equipment under such conditions?

There were those who proposed that harvesting units be sent to each farm. They maintained that the equipment could be easily maneuvered. And once the weather improved the combine method could again be employed.

Following some heated discussions, a unanimous opinion was finally reached: the detachment would not be broken up into teams. This decision was justified in particular owing to the fact that both farms had large tracts of grain crops.

On one of these, at the Progress OPK, the harvest work commenced just as soon as the sun had dried out the grain.

Since that time there has not been one day during which the machine operators could calmly carry out their shift work: they were hampered by rainfall. Thus the leaders of the detachment had to remain on the alert always.

"We must be more vigilant than the meteorologists" stated M. Kazak, "we must monitor the skies and attempt to ascertain the zone in which the rain is falling. This will allow us to find a new front for our work and it will be to this area that we will move our equipment."

According to the specialists, such maneuvering during the period of inclement weather made it possible for the detachment to cut down grain crops on 250 hectares and to pick up windrows on 200 hectares. And this is almost one third of the areas on which the grain has already been harvested. In the event of a delay, the crop would remain standing.

But inclement weather during the busy harvest season is not the only problem. It was unfortunate that still earlier driving rainfall accompanied by turbulent winds and even hail had prevailed over the grain fields. And although the plantings on the entire area were treated in a timely manner with the Tur preparation, the wheat nevertheless still lodged.

This especially hindered the harvesting of the crop. Naturally, only the two-stage harvesting method is effective on such fields. And the carrying out of the first stage -- the cutting down of the lodged grain crops is very difficult, even though the machine operators equipped the harvesters with additional devices for raising the plants above the soil and for preventing losses of the ears from the cutting unit. This must be done in order to ensure that the grain together with the straw and chaff is fully harvested.

Thus the combine operators must from time to time, depending upon the condition of the tracts, change the operational regime of the units and, in particular, the speed of movement. The same holds true for the threshing of the windrows, although their bulk should be reduced in advance such that they will dry out rapidly.

These unique maneuvers in the harvesting technology also made it possible to extend the daily working period. On an average day, during the work period, the detachment threshed windrows on 60 hectares and at the present time they are carrying out such work on an area that is more than twice as large. Combine operators V. Tofan, D. Slutu and V. Byrsan have raised their daily output to 15-18 hectares.

Having harvested their grain crops during the period of inclement weather, the collective of the detachment is now confidently approaching the finish line. Each individual is proud of the fact that, despite the inclement weather, no crop losses were sustained. At the Progress OPK, an average of 48-50 quintals of select grain is being obtained from each hectare of wheat field and at the Viktoriya OPK -- 40 quintals.

Noting how the crews of the harvesting units place a high value on each moment of time, the drivers of the motor vehicles are also striving to ensure that the combines with filled hoppers are not allowed to stand idle. All of the combine operators and drivers have mastered the technology of unloading the grain while moving.

The operators of bulldozers and motorized graders, during the course of constantly maintaining the field roads in good condition, are also displaying concern for achieving an efficient rhythm for the harvesting production line. The weighing specialists and operators of the unloading equipment are rapidly accepting the grain for the threshing floor.

And on the tracts from which the grain has already been harvested, work is now being carried out by the straw collectors, the agricultural chemists and by the crews of soil cultivation machines. This means that there will be a fine harvest next year.

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BRIEFS

LITHUANIAN TOP DRESSING--Vilnius--Lithuanian farms have begun applying mineral fertilizers to crop meadows and pastures. For the first time the top dressing is being done everywhere according to cartograms that have been developed by the rayon agrochemical services. Before the work of the meadow agronomists and leaders of mechanized teams began they took a training course in the republic school of advanced practice on the basis of the Nauyas givyanimas (Novaya Zhizn') Kolkhoz in Shyaulyayskiy Rayon. This farm has been obtaining large yields of grasses for several years in a row. [Text] [Moscow GUDOK in Russian 1 Apr p 1] 11772

FLEXIBLE TACTICS--Vilnius--The allies of the machine operators on Lithuanian farms have used flexible tactics in beginning mass planting of spring crops in the southern and western rayons of the republic. As distinct from preceeding years, when planting was started on individual sections, this year the detachments are operating on expansive areas. The large T-150K tractors have gone out onto the dried fields with wide-grasp sets of equipment, and the maneuverable Belarus' machines have been used on damp fields. This makes it possible to plant spike crops at the optimal times and obtain vigorous shoots. Ipatovo detachments which have been created on all farms have been provided with sets of wide-grasp equipment. Their technical servicing has been arranged. It is planned to change the structure of the spring fields: most of them will be planted in the most productive crop under local conditions--barley. As a result of reducing the areas planted in less productive annual grasses, it is intended to expand the areas planted in highly productive pulse crops. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 82 p 1] 11772

SPRING CROP PLANTING--Vilnius--Mass planting of spring crops has begun in Lithuania. Ipatovo detachments are using sets of wide-grasp equipment everywhere on large areas. Comprehensive servicing of the technical equipment and providing service for machine operators will make it possible to conduct the planting work at optimal times and at a high agrotechnical level. [Text] [Moscow GUDOK in Russian 8 Apr 82 p 1] 11772

GENEROUS FIELDS--Vilnius--Farmers of Lithuania have completed the planting of grain crops. It was completed ten days earlier than last year even though the planted areas were expanded by 25,000 hectares. The shock work rates were achieved by using the Ipatovo method. A sign of this year's planting is the effective struggle for high-quality work. Each field was under the supervision of a commission which included head agronomists of the kolkhozes and sovkhozes and representatives of the rayon agricultural administration. They consulted with workers of the Lithuanian Scientific Research Institute of Farming. Having set a goal of obtaining an average of 20 quintals of grain per hectare this year, the farmers completed the planting with only first-class seeds. [Text] [Moscow GUDOK in Russian 15 May 82 p 1] 11772

TENDING PLANTING AREAS--At the present time it is very important for all farms to organize the work of tending the planted areas well and carrying it out promptly. This work is being done carefully in Vilkavishkskiy, Ionavskiy, Panevezhskiy, Alitusskiy and several other rayons. On the areas planted in spring crops, sugar and feed beets, potatoes, corn and other crops this year the weeds were destroyed by harrowing before the appearance of the shoots of the crop plants, and afterwards herbicides were utilized skillfully. But this is not the situation everywhere. The tending of the spring crops must be improved primarily on the farms of Shal'chininkskiy, Trakayskiy, Vil'nyusskiy, and Zarasayskiy rayons where a relatively small proportion of the area planted in spring crops was harrowed before the appearance of the shoots. The spraying of the spring crops with herbicides is being delayed on the Za rodinu and Oktyabr' kolkhozes in Shal'chininkskiy Rayon and the Kolkhoz imeni 8 Marta in Vil'nyusskiy Rayon. The farms of Kaunasskiy, Pasval'skiy, Kapsukskiy and Kedayskiy rayons must harrow the sugar beets more rapidly and the farms of Ignalinskiy, Radvilishskiy, Rokishkskiy, Anikshchyayskiy and Trakayskiy rayons must harrow the areas planted in potatoes more intensively, hill them and treat them with herbicides. Certain farms of Vil'nyusskiy and Shal'chininkskiy rayons are late in cultivating the rows between the potatoes. Mechanical and chemical means must used to destroy the weeds on the areas planted in corn. It is recommended that these areas be harrowed everywhere before the appearance of the shoots. [Text] [Vilnius SOVETSKAYA LITVA in Russian 20 May 82 p 3] 11772

SPRAYING SPRING CROPS--The best time for spraying spring crops with herbicides is beginning. Specialists in tending plants must be concerned about making sure that the areas are sprinkled with them in the appropriate stages of development and with the optimal norms of herbicides. The warm weather has stepped up the activity of plant pests. Damage is being caused to the appearing shoots by garden fleas and, in some places, opaque burying beetles. Garden fleas are also causing damage to areas planted in flax. It is necessary to use the appropriate means of fighting against these pests. Clover that has been left for seeds should also be treated with insecticides. [Text] [Vilnius SOVETSKAYA LITVA in Russian 20 May 82 p 3] 11772

SPRING FARM WORK--Many farms have already completed the planting of spring grain crops, sugar beets, flax and potatoes. But the farms of individual rayons have not yet planted grain crops or flax. The planting of potatoes must be accelerated on the farms of Utenskiy, Rokishkskiy, Ignalinskiy, Shvenchenskiy, Shirvintskiy, and Kel'meskiy rayons since favorable conditions exist for this. The planting of feed root crops, annual grasses and silage crops cannot be put off. Many farms are delaying the planting of corn, despite the plans for planting it. At the same time there should be no delay in replanting winter crops that have perished, and only with spring grain crops. After the completion of planting each farm should evaluate the quality of the labor and, depending on this, pay the machine operators additional remuneration. It is necessary to destroy the weeds on the planted areas as intensively as possible, using mechanical and chemical means of fighting against them. The best method of doing this on areas planted in spring crops is harrowing before the appearance of the shoots. A large quantity of weeds are destroyed with harrowing. This is especially important now when their germination has become more active because of the warm weather. On sections that were planted in grain crops early, where the plants have 2-3 leaves, the weeds should be destroyed with chemical means. Special attention should be devoted to tending potatoes. Before the germination of the potatoes they should be harrowed no less than 3-4 times and hilled. The fight against weeds should be a common cause. [Text] [Vilnius SOVETSKAYA LITVA in Russian 12 May 82 p 1] 11772

SPRING FIELD WORK--The sunny and windy weather has contributed to a marked increase in the rates of spring field work. While a week ago grain crops were planted on a little more than 5 percent of the planned areas, as of 26 April, as one can see from the reports, this figure had already reached 28 percent. All rayons are also planting other spring crops. As usual, the leader is Dobel'skiy Rayon where almost 62 percent of the spring crops and more than 80 percent of the grain crops have been planted. The area planted in grain crops was increased by 50.9 percent. The farms of Yelgavskiy, Talsinskiy, Kuldigskiy, Tukumskiy and Liyepayskiy rayons have planted grain crops on more than half of the planned areas. The areas planted in grain crops on the kolkhozes and sovkhozes have increased by 13 percent during the past three days. Sugar beets are being planted in the rayons that grow them. This work is being done most successfully by machine operators of Bauskiy Rayon where about 1,000 hectares have been planted in sugar beets. This amounts to about one-third of the planned assignment. Following them are sugar beet growers of Dobel'skiy and Yelgavskiy rayons. In the republic as a whole this crop has been planted on about 3,000 hectares, which is 23 percent of the plan. The planting of potatoes has been started. They have been planted on 3-5 percent of the planned areas in Kuldigskiy, Rizhskiy and Liyepayskiy rayons. [Text] [Riga SOVETSKAYA LATVIYA in Russian 27 Apr 82 p 1] 11772

SPRING CROPS--Spring crops have been planted on 52.6 percent of the planned area in the republic, including grain crops--68.5 percent. The past week produced a great increase, and during the past three days alone the increase in areas planted in grain crops amounted to 15.3 percent. The first to complete the planting of grain crops was Kuldigskiy Rayon. The work proceeded to the final hectares in Dobel'skiy Rayon yesterday. The grain crops have been planted on a total of 125 farms. Large areas have still not been planted Balvskiy, Gulbenskiy, Aluknenskiy, Yekabpillskiy, Kraslavskiy and other rayons. The conditions that have arisen demand accelerated preparation of the soil and planting. The planting of sugar beets is continuing. Sugar beet growers of Bauskiy and Dobel'skiy rayons are handling this work best. The most feed root crops have been planted in Dovel'skiy, Bauskiy, Yelgavskiy and Ludzenskiy rayons. The rayons that are behind in this are Liyepayskiy, Valkskiy, Ventspilsskiy, Kuldigskiy and Valmiyerskiy. Potatoes have been planted on 8.9 percent of the planned area, and vegetables on 23.4 percent. In many places the work rates here do not correspond to existing possibilities. It is especially important to expand the areas planted in legume crops. Many farms are cultivating almost no pulse crops. Certain managers respond only with words to the important necessity of solving the protein problem. It is necessary to increase the responsibility for providing animal husbandry with protein feeds. It is now important to arrange things so that the work in the fields is done on two shifts without allowing a lapse of time between the preparation of the soil and the planting. It is necessary to use more extensively combined machines that make it possible to perform several technological operations with one pass over the field. Each minute must be strictly accounted for. Shock labor for the harvest of the second year of the five-year plan! [Text] [Riga SOVETSKAYA LATVIYA in Russian 7 May 82 p 1] 11772

WEATHER, PLANTING--Spring was early this year and, as is typical of springs like this, it was prolonged. There was not much heat in April although the second half of it was sunny. Spring processes in nature developed slowly. Winter crops grew in the western and southern rayons of the republic, mainly during the day hours. The soil dried out slowly. Only light soils on elevated sections were ready for cultivation at the beginning of April. The planting of spring crops was begun selectively. During the snowfalls on 10-15 April in many rayons and on 21 April in eastern Latvia the fields were covered with snow which melted rapidly. Most of the time the temperature at night was minus 1-5 degrees centigrade. The upper layer of the soil was frozen to a depth of several centimeters during the morning hours. All this retarded the rates of field work. On 23-24 April, approximately a week later than usual, the average daily air temperature in the republic exceeded 5 degrees centigrade. The growth of winter crops and grasses began again everywhere. On 20-21 April an examination of 76,000 hectares of winter crops was conducted by helicopter. Only 17 percent of the planted areas were in good condition, 55 percent--in satisfactory condition, and 28 percent of the planted areas had thinned out too much, that is, they had to be replanted. The plants need painstaking care and additional top dressing. During the past ten days of April alone up to 10 millimeters of precipitation have fallen, which is 60 percent more than the usual norm. The plowed layer of soil has dried to a soft resiliant condition almost everywhere, which makes it possible to begin mass planting of grain crops and sugar beets. The planting of vegetables and potatoes has also been started. By the end of April the aspens began to bud and the first leaves appeared on the cherry trees. Buds began to swell on the fruit trees and the first leaves appeared on the gooseberry and black currant bushes. The winter grain crop began stem extension. All this took place at times that are close to the many-year average. The supplies of productive moisture in the plowed layer of the soil amounted to 35-45 millimeters, which is close to optimal, and on fields with heavy soils, the 0-20 centimeter layer contained 50-60 millimeters of productive moisture. The grass is not very high on the meadows and pastures: 3-10 centimeters. During the next few days our republic will be affected by a cyclone which will cause unstable weather, short rains and low daily temperatures. [Text] [Riga SOVETSKAYA LATVIYA in Russian 7 May 82 p 3] 11772

COMPLETED SPRING WORK--The farms of the republic have entered the period of completion of the planting of spring crops and tending the planting areas. Kolkhozes and sovkhozes have all the necessary conditions for producing a large yield on each farm. There has been a 9-percent increase in the planted areas during the past three days. The planting of grain crops has been completed in Dobel'skiy, Yelgavskiy, Kuldigskiy, Liyepayskiy, Rizhskiy, Saldusskiy and Tukumskiy rayons. The plan for the planting of feed root crops has been fulfilled by the farms of Bauskiy, Dobel'skiy and Tukumskiy rayons. There is still a large amount of work to do on the kolkhozes and sovkhozes of Talsinskiy, Valmiyerskiy, Liyepayskiy and Orskiy rayons. Potatoes have been planted on 37 percent of the planned area. This work is being done successfully in Bauskiy, Yekabpilsskiy, Saldusskiy, Kuldigskiy and Liyepayskiy rayons. Very few potatoes--only 14 percent--have been planted in Limbazhskiy Rayon. When completing the planting it is important to begin to tend the planted areas without delay in order to protect the fields from weeds, pests and diseases. This work has been started successfully by the farms of Bauskiy, Dobel'skiy and Yelgavskiy rayons. A considerable proportion of the area planted in winter crops is now being treated with retardants. It is important to be concerned about the productivity of the pastures, to begin to treat them and mow them promptly, and to begin to prepare artificially dehydrated feeds. [Text] [Riga SOVETSKAYA LATVIYA in Russian 11 May 82 p 1] 11772

SPRING CROP PLANTING--The kolkhozes and sovkhozes of the republic are completing the planting of spring crops. The closest to finishing planting work altogether are the farms of Dobel'skiy, Yelgavskiy, Bauskiy and Saldusskiy rayons. It is necessary to accelerate the rates of potato planting. During the past three days the increase here amounted to 12 percent. In Rezeknenskiy Rayon, where half of the potatoes have still not been planted, the increase during the past three days is only 6 percent. One cannot be slow in tending the planted areas. So far 15 percent of the grain crops and 8 percent of the seed crops of perennial grasses have been treated with herbicides. Haying lies ahead. Even today the kolkhozes and sovkhozes must have a concrete work plan so that everyone knows his position and his daily assignment. But many farms have not drawn up a plan for feed procurements. It is time to treat the staffing of technological detachments for the haying period and to assign them the necessary technical equipment and transportation. [Text] [Riga SOVETSKAYA LATVIYA in Russian 18 May 82 p 1] 11772

HERBICIDE TREATMENT--The kolkhozes and sovkhozes of the republic are completing the treatment with herbicides and, where necessary, retardants. The time periods for this work are especially short in the western and central rayons. In the eastern part of the republic the treatment must be completed within 7-8 days. The plantings on many sections are thin and weeds are coming out. It is important to treat seed plots of perennial grasses with herbicides. This device is being applied effectively by workers of Rizhskiy and Ventspilsskiy rayons. The work is being delayed on the farms of Aluksnenskiy, Balvskiy, Gulbenskiy, Limbazhskiy and Daugavpilsskiy rayons. It is best not to treat the early plantings of spring crops with herbicides until the appearance of the third leaf. Treatment in the beginning of the plants' pillaring stage leads to a reduced yield. Kolkhoz and sovkhoz agronomists must remember this. This work must be completed before 10-15 June. It is necessary to be concerned about caring for the areas planted in flax, sugar beets and potatoes. This year there have been many garden fleas in the sugar beets. In places where they exist it is necessary to immediately begin spraying the planted areas with chemicals. After interrow cultivation the plants are thinned and treated with nitrogen fertilizers. The planting of potatoes is coming to an end. The main task now is to take care of the planted areas: harrowing and hilling. Since we have no special herbicides for potatoes it is important to observe all agrotechnical devices for destroying weeds. On half of the areas planted in potatoes a systemic fungicide will be used. But if the fields are not clean the preparation alone will not produce the proper effect. Only advanced agrotechnology for the cultivation of potatoes will provide a good crop. One cannot ignore the areas planted in corn either. They must be harrowed and treated with fertilizers promptly. This year's will depend largely on the time periods and the quality of the tending of the areas planted in these crops. The main thing is not to allow the weeds to grow. [Text] [Riga SOVETSKAYA LATVIYA in Russian 22 May p 2] 11772

SNAKES ON THE ROAD--Many drivers on the 60-kilometer highway from Alma-Ata to Frunze witnessed an unusual spectacle. A hoard of snakes crawled across the road in a group about 900 meters long and 20 meters wide. Traffic on the highway was stalled for 40 minutes. This event, naturally, aroused a lot of interest in the city. Let us hear the opinion of specialists. "Of course this is a unique phenomenon," said the senior scientific worker of the Institute of Zoology of the Kazakh SSR Academy of Sciences, candidate of biological sciences, Z. Brushko. "So far it is difficult to give a precise explanation. One can only make guesses. Snakes are cold-blooded animals and so this unusual behavior could have been brought about by the hot weather in May." [Text] [Moscow TRUD in Russian 10 Jun 82 p 4] 11772

INDUSTRIAL TECHNOLOGY--Chimkentskaya Oblast--Corn planting is being completed in southern Kazakhstan. It will be planted on more than 60,000 hectares of irrigated land this year and half of this area will be allotted for planting commercial and seed corn. Last year the kolkhozes and sovkhozes of the oblast began to introduce industrial technology for raising this crop. Because of the new technology, expenditures on cultivating the crop have decreased, the agrotechnology has improved and the productivity has increased. The grain yields per hectare have increased to 52 quintals. On 14 farms they have obtained an average of more than 80 quintals of ears. And such sovkhozes as the Pakhtaaral and Novyy put' in Pakhtaaral'skiy Rayon, the Bol'shevik, Pobeda and 40 let Oktyabrya in Kirovskiy Rayon and the Suzakskiy in Suzakskiy Rayon harvested 90-100 quintals of grain per hectare. This year the area planted in corn that is cultivated with industrial technology will be expanded 2.5-fold. The farms that have armed themselves with the advanced method have prepared technical equipment ahead of time for precision sowing, stored up herbicides and mineral fertilizers and created mechanized complexes. The corn growers completed the planting in a couple of days in Pakhtaaral'skiy, Chardarinskiy and Dzhetysayskiy rayons. Planting work is also being done as shock work in other rayons. The largest area of corn for grain is in Kzylkumskiy Rayon. The areas planted in corn are being expanded from year to year as a result of reclamation of old land and the introduction of new land. This year the areas have been increased by 3,000 hectares and now amount to a total of 12,000 hectares, of which 10,000 hectares will produce corn grown according to the new technology. In recent years farms of the rayon have been constantly increasing the gross yield of ears. The increased production of corn grain is being achieved not only as a result of expanding the planted areas, but also because of the steady increase in the productivity of the fields. This year, for example, the Kzylkumskiy corn growers have waged a struggle to obtain 70 quintals of grain per hectare. About 40 teams have committed themselves to increasing productivity to 100 quintals. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 7 May 82 p 1] 11772

OPTIMAL TIME PERIODS--Chimkent--The last planting aggregates have left the corn fields of the oblast. The planting was completed at the optimal times. The oblast provides corn seeds for the northern rayons of the republic. During the past four years the delivery of them has increased 4-fold. This year previously unused saline and marshy areas will be introduced into the crop rotation. On the initiative of the Talapty Sovkhoz they have conducted deep three-repetition replowing, leached the field, applied a large quantity of organic fertilizers and conducted liming. This complex of measures helped the farm to increase the grain yield to 100 quintals per hectare. This year 12,000 hectares of previously abandoned land will be planted in corn. ([Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 13 May 82 p 1] 11772

SOUTHERN HARVEST--Chimkentskaya Oblast--The farms of southern Kazakhstan are beginning to harvest grain spike crops. The first to take the combines out onto the grain fields were the machine operators of Dzhetysayskiy, Saryagachskiy, Kelesskiy and Leninskiy rayons. The next to begin operating the technical equipment were the farmers of Sayramskiy, Bugunskiy, Lengerskiy and a number of other rayons of the oblast. The grain has been mowed and threshed on several tens of thousands of hectares. A good yield of grain spike crops is being harvested on irrigated land by grain growers of Pakhtaaral'skiy and Dzhetysayskiy rayons. Sets of plowing and soil cultivation equipment go out onto the mown areas immediately and prepare the land for repeated planting of corn for silage. A second crop will be harvested from these irrigated areas in the autumn. In the oblast as a whole there are repeated plantings on an area of 3,500 hectares, which will make it possible to obtain a good deal of additional output. The farmers are relying mainly on reducing the time periods of the harvest this year and conducting it with high quality. All of the kolkhozes and sovkhozes have introduced the large group method of utilizing sets of equipment. Technical equipment will be maneuvered extensively, both within the farms and within the rayons. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 19 May 82 p 1] 11772

HOMELESS SNAKES--Alma-Ata--Residents of the foothill Zailiyskiy Alatau area have never seen such a thing before. One hot day a mass of snakes was crawling across the highway that joins the republic's capital to its western rayons. Drivers halted traffic on the road for 40 minutes. The snakes slithered in a group that was 20 meters wide and almost a kilometer long. A similar spectacle was observed in other parts of the foothills of Zailiyskiy Alatau. In all cases the snakes were going to the mountains. Specialists think that the reason for this migration is the unusual heat which has persisted in the south of Kazakhstan for a long time. [Text] [Dushanbe KOMMUNIST TADZHIKISTANA in Russian 3 Jun 82 p 4] 11772

SELECTIVE PLANTING--Kustanay--The Fedorovskiy and Aleksandrovskiy sovkhozes and the Sovkhoz imeni Frunze were among the first to begin selective planting. The machine operators immendiately gathered speed. The planting support service is helping them in this. Automatic seed loaders and sets of equipment for pouring fertilizers into the seeders are operating continuously. Dispatchers are maintaining communications with each detachment and team. It will be necessary to plant wheat on an area of 3 million hectares in the oblast. The soil protection system of farming is being applied on the entire planted area. It is intended to apply mineral fertilizers to the rows on an area of 1,350 hectares. The farms have created more than 750 planting complexes and thousands of teams. Automatic loaders have been prepared for filling the seeders. Machine operators have developed competition for earning the Emblem of Quality for each field. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 15 May 82 p 1] 11772

SPRING PLANTING--Kokchetav--The Zlatogorskiy Sovkhoz has followed the tradition of festively celebrating the beginning of spring planting. Pioneers gave the machine operators bouquets of flowers before they went out onto the fields. Labor veterans saw them off with grain growers' good wishes. There were 34 sets of planting equipment that went out onto the fields. High-class wheat seeds are being placed in the well prepared, fertilized soil. Zh. Dugembayev and V. Sukhnin are each pulling 4 SZS-2.1 seeders with their Kirovets tractors. The machine operators of the oblast will have to plant 2,641,000 hectares in grain crops. Wheat will occupy most of this area. The areas planted in grain will be larger than last year. Previously unsuitable land and paths between the strips have been put to use. Considerably larger areas will be planted in the new strains of Omskaya-9 and Tselinnaya-21 strong wheat, Almaz durum wheat, and Tselinyy-5 and Donetskiy-8 barley. They will be planted on an area of about a million hectares. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 15 May 82 p 1] 11772

SPRING WORK--Aktyubinskaya Oblast--Spring work is extensively underway on the steppe expanses of Aktyubinskaya Oblast. All the rayons of the oblast are conducting planting. Under this year's difficult conditions the grain growers are displaying high mastery, maneuvering technical equipment skillfully and achieving excellent rates of work. Machine operators of the rayon special farm association during the past four years have always been the first to complete planting in Khobdinskiy Rayon. An efficiently arranged engineering service has contributed to this. Just one example. They were the first in the oblast to adopt the experience of the Kustanayskaya workers and adapt MMZ-555 dump trucks to be used as grain haulers. As a result they have obtained a quite significant advantage in time by increasing the capacity of the grain trucks almost 4-fold. Spring field work is gathering speed on other farms of Khobdinskiy Rayon as well. The rayon as a whole occupies second place in the oblast in terms of the daily increase in planted areas, following only Komsomol'skiy Rayon. Good news is coming in from the southern rayons of the oblast. Grain growers of Uilskiy Rayon, for example, have already completed the planting of spike crops and now are beginning to plant millet seeds. This year's spring is difficult. But the machine operators are counteracting the caprices of the weather with good organization. Of the 15,000 seeders being used for planting, almost 14,000 are stubble seeders. On half of the area the moisture was sealed in only with heavy BIG-3 harrows. Preplanting cultivation will be done on 700,000 hectares. In the autumn the farms applied powdered super phosphate to more than 100,000 of fall plowed fallow. Mineral fertilizers will be applied to the soil along with the seeds on another 300,000 hectares. More than a million tons of organic fertilizers have also been shipped to the fields. All this should create a firm foundation for the future harvest. Grain growers are taking advantage of every hour to complete the planting well and at the best agrotechnical times. [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 8 May 82 p 1] 11772

MILLET PLANTING--Aktyubinsk--The farms of Uilskiy Rayon were the first to plant millet on the entire area. It took them only 100 hours to do this. The valuable groat crop was planted on the best land, plowed virgin land and arable land where perennial grasses had grown. More than 90 farms in the oblast are engaged in millet growing. Last year Leninskiy Rayon obtained an average of 15 quintals of grain per hectare. The year the oblast will plant 144,000 hectares in groat crops. Forty percent of this area has already been planted. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 May 82 p 1] 11772

INTENSIVE PLANTING--Arkalyk--Almost all the sets of planting equipment have been staffed with two shifts of drivers on the Sovkhoz imeni Leninskiy Komsomol, which was one of the first in the oblast to begin planting grain crops. Courses to train machine operators helped to increase their numbers. The sovkhoz is doing all of its own field work. Utilizing technical equipment on two shifts helps to perform field work comprehensively and well. Areas that have been prepared during the night are planted during the day. Despite the unfavorable weather conditions last year the farms obtained 13 quintals of grain from each of 28,000 hectares. Everything possible is being done to raise a large harvest this year too. Sufficient moisture has accumulated in the soil. The seeds have been brought up to high conditions. Fertilizers are being applied to the rows. Many sovkhozes and kolkhozes of the oblast are beginning to plant wheat. Almost 2 million hectares have been allotted for this crop. [Text] [Alma-Ata- KAZAKHSTANSKAYA PRAVDA in Russian 15 May 82 p 1] 11772

BROAD GRASP--Arkalyk--Farms of the southern rayons of the steppe Turgay have begun to plant grain crops. "The distinguishing features," says the head agronomist of the oblast agricultural administration, N. N. Nurmukhanbetov, "are maximum retention of moisture in the soil--the main factor in high productivity in our zone--and reduction of the time interval between preplanting cultivation and planting of the seeds." The machine operators have worked rapidly since the very beginning of planting. The maximum amount of technical equipment has been included in the work, mainly Kirovets tractors with wide-grasp sets of equipment. Planting is being done on two shifts on the Vostochnyy, Tselinnyy and Angarskiy sovkhozes and other farms of Arkalykskiy Rayon. On the Turgay Sovkhoz-Tekhnikum, the brigade headed by State Prize Winner of the Kazakh SSR, V. V. Butym, has resolved to complete the planting in 8-10 days. Their initiative has been taken up by many field tractor brigades. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 May 82 p 1] 11772

SOCIALIST COMPETITION--Tselinogradskaya Oblast--The leaders of the field tractor brigades gathered in Tselinograd before the beginning of spring field work. The best of them signed an appeal to all grain growers of the oblast to develop socialist competition for a worthy greeting to the 60th anniversary of the USSR and a further increase in the productivity of the fields. They called upon the farmers to do everything possible so that each virgin land hectare will "work" at full force. The planting of grain crops is in full swing on all farms of the oblast. A typical feature of this work is a rapid tempo. Even on the second day the daily output reached 200,000 hectares. This is considerably more than last year. The basic preparation of the technical equipment, the efficient organization of the work, and the self-sacrificing labor of the machine operators are having their effect. "The spring was dry and so it is very important to place the seeds in moist soil. In some places the wild oats have not come up yet. As a result of plowing old grass fields we have expanded the area planted in grain crops by 5 percent," says the director of the Shortandinskiy Sovkhoz in Shortandinskiy Rayon, V. G. Semenyuk. They are placing great hopes in new strains of grain crops: Tselinaya-21 wheat, Tselinyy-5 barley and others. While they were planted on 800,000 hectares last year, this spring they will occupy 1.2 million hectares. In the Yermentauskiy special farm association which is planting 30,000 hectares in grain crops alone, I heart these words from one of the machine operators: "For a holiday a person places on the table all the best that is in the home. We have our greatest holiday this year--the country's 60th anniversary. We are striving to make sure that our virgin land contribution to this table will be the largest." This wish is dear and comprehensible to everyone. And it is with this thought that the grain growers are waging the struggle for the harvest of the second year of the five-year plan. [Excerpts] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 21 May 82 p 1] 11772

GRAIN FARMERS--Tselinogradskaya Oblast--Grain farmers of Tselinogradskaya Oblast have planted 3 million hectares of arable land this year--200,000 hectares more than last year. They have resolved to obtain no less than 3.4 million tons of grain. The good organization of the field work, the powerful technical equipment at the disposal of the farmers, and the progressive soil protection system of farming which is being applied on the virgin land everywhere--these comprise the basis of the future harvest. Spring was very late in coming to the virgin land this year as it was to other regions of the country. But the heat did not abandon the northern Kazakhstan steppes. The weather has not been like this for many years. The unusually severe cold spells in April and May made it impossible for the weeds to come up before the beginning of the planting and the farmers were not able to fight against them effectively. Therefore the following recommendation came from the virgin land science staff of the All-Union Scientific Research Institute of Grain Farming in Shortandy: since the conditions that have arisen are favorable for the germination of weeds, especially wild oats, the worst enemy of grain farmers, planting cannot be done without preplanting cultivation on fields where wild oats are growing. On the Novoishimskiy Sovkhoz in Tselingradskiy Rayon where I had occasion to visit during the time of planting work, this is what they are doing: in the autumn on the entire planted area, which amounts to 32,000 hectares, they turned the fallow with KPG-2.2 and KPSh-9 anti-erosion subsoil cultivators. After that the soil was cultivated with BIG-3 tooth harrows. Mineral fertilizers were applied to the fallow--3 quintals per hectare. Snow retention was done in the winter. In April they sealed in the moisture and leveled the soil. Despite the fact that the spring was dry and the moisture in the soil was only from the autumn rains and snow, the Novoishimskiy grain growers managed to retain it. Moreover, for the first time the farm applied mineral fertilizers to the rows on all of the arable land. All this inspires confidence that the yield will be fairly good. [Excerpts] [Moscow TRUD in Russian 8 Jun 82 p 1] 11772

SPRING CROP PLANTING--The farmers of the Kazakh Ural area have completed the planting of spring crops at the best agrotechnical times. The work was done considerably more rapidly than it was last year. As a result of the assimilation of new land, the grain fields in the oblast have been increased by more than 200,000 hectares this spring. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 22, May 82, p 2] 11772

GRAIN PLAN EXCEEDED--Tarakliyskiy Rayon--Yesterday the grain growers in Tarakliyskiy Rayon completed their first harvest. The grain and pulse crops have been harvested from an area of 10,000 hectares. The principal grain crop -- wheat -- furnished 39 quintals per hectare. The gross production of grain amounted to 32,000 tons. This was higher by 2,000 tons than the amount called for in the socialist obligations. The plan for the sale of grain to the state was fulfilled by 104 percent. Temporary party groups, deputy posts and people's control posts were in operation in all areas. They raised the fighting spirit in the campaign to bring in the harvest and they monitored the quality of the harvest operations. /by N. Pershin/ /Excerpts/ /Kishinev SOVETSKAYA MOLDAVIYA in Russian 24 Jul 82 p 1/ 7026

BARLEY HARVEST COMMENCES--Kishinev--The machine operators of Moldavia have commenced their mass harvesting of barley. In the southern and central regions of the republic, all of the tracts are outlined by lines of windrows. Many farms are obtaining up to 35 quintals of grain per hectare. /Text/ /Moscow TRUD in Russian 6 Jul 82 p 1/ 7026

WINTER BARLEY, PEAS HARVEST--Kishinev, 3 Jul--The Kolkhozes imeni Karl Marks and Gigant in Vulkaneshtskiy Rayon were the first to commence their harvest work. The harvesting of winter barley and peas has commenced in Kagul'skiy, Chadyr-Lungskiy and other southern rayons. Intensive varieties of these two crops are being grown this year on grain fields which are twice as large as those of last year. The time is approaching for sowing the principal food crop -- winter wheat. There are 665 large mechanized detachments in operation throughout the republic and in all areas they will operate in two shifts according to hourly schedules. Electronic computers were employed for selecting the best movement routes for the transport equipment leading from the fields to the elevator. /by N. Marfin/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 4 Jul 82 p 1/ 7026

SOIL PREPARATION WORK--Kishinev, 17 Jul--Upon harvesting their grain and pulse crops, the all-round mechanized detachments immediately set to work preparing the soild for next year's harvest. The machine operators of the Chadyr-Lunga Association for Mechanization and Electrification required only 4 days for carrying out their shallow plowing and sweep cultivation, with a simultaneous application of fertilizer to 2,000 hectares intended for the sowing of winter barley. This year it will be occupied completely by new and highly productive varieties -- Tsiklon and Standard. Over a period of 2 years, the local strain testing station carried out production tests on these new varieties. They furnished yields which were 12-15 quintals higher than the Odesskiy-46 sown earlier here. The Tsikoln and Standart varieites are also being sown on winter fields in Chimishliyskiy, Suvorovskiy, Vulkaneshtskiy, Lazovskiy and other rayons throughout the republic. /By N. Marfin/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 18 Jul 82 p 1/ 7026

GRAIN LOSSES REDUCED--The grain growers in Tarakliyskiy Rayon, despite the extremely difficult conditions of this year's harvest, are succeeding in holding grain losses to a minimum. They are ountering the capricious weather, which has complicated the operations in the form of almost daily rainfall, by employing well thought out tactics for their mowing and threshing of the grain crops. The bright sun which appeared in the morning, following rainfall the previous evening, gave promise of a beautiful harvest day forthcoming. In short, everything is being done to ensure that a fine grain harvest will be obtained from an area of 6,000 hectares -- 1,000 more hectares than last year's winter crop fields. Moreover, the crops must be harvested during the best periods, without losses and an average of no less than 40 quintals of select grain obtained. /By Ye. Tishchenko/ /Excerpts/ /Kishinev SOVETSKAYA MOLDAVIYA in Russian 15 Jul 82 p 1/ 7026

DESPITE INCLEMENT WEATHER--Teleneshtskiy Rayon--Notwithstanding the caprices of nature, the machine operators of the second all-round detachment are persistently carrying out their grain crop harvesting work on the fields of the Viktoriya Kolkhoz. Four varieties of wheat have been planted at this farm on an area of more than 1,300 hectares and each field requires a special approach. Although the wheat has lodged over large areas owing to severe rainfall accompanied by strong winds, nevertheless combine operators M. Paladi and his son Vitaliy, G. Porchiryanu and F. Porchiryanu have reequipped their machines and, taking advantage of each good hour of time, are skilfully harvesting their lodged grain crops. Each of them has vowed to obtain from 400 to 500 tons of the amber grain. Today the red flag flies over the leader in the competition -- the Paladi family crew. In the diligent campaign to harvest the crops, the other seven crews trail the leader by only a small margin. /Text/ /Kishinev SOVETSKAYA MOLDAVIYA in Russian 20 Jul 82 p 1/ 7026

RIPENING OF CROPS--Ural'skaya Oblast--The crops are ripening on the fields in Ural'skaya Oblast. This year the oblast's sovkhozes and kolkhozes must thresh grain crops from an area of almost 2 million hectares. In addition, mustard must be harvested from 2[illegible],000_hectares and seed_plants_for_annual and perennial grasses from [illegible]4,000 hectares. /by Yu. Peshkov/ /Excerpt/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 Jul 82 p 1/ 7026

A FINE CROP--Kustanayskaya Oblast--This year the prospects are good for a fine grain crop in the oblast. The recent rainfall was very timely. The grain crops are increasing in size. One looks at them and wonders: _will the farms succeed in making preparations for the harvest? /by V. Vedenko/ /Excerpt/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 16 Jul 82 p 1/ 7026

COMMENCEMENT OF HARVEST WORK--Dzhambul, 28 Jun--The machine operators at the Kolkhoz imeni Kirov in Merkenskiy Rayon were among the first to move their harvesting equipment out onto the fields. The harvesting work has commenced also in Dzhambulskiy and Sverdlovskiy Rayons. /by A. Iseyev/ /Excerpts/ /Moscow SEL'SKAYA ZHIZN' in Russian 29 Jun 82 p 1/ 7026

WHEAT HARVEST--Alma-Ata--The farmers in the capital's oblast have commenced harvesting their grain crops. Despite the dry winds, the farmers at the Oktyabr'skiy Sovkhoz have raised a fine crop. The combine operators are obtaining an average of almost 26 quintals of wheat per hectare. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 8 Jul 82 p 1/ 7026

RESCUED CROP--Alma-Atinskaya Oblast--"Each vegetable has its own time," according to an old proverb. This year the vegetable period was somewhat late. This was to some degree the result of the severe drought which occurred in April and May. The seed which was placed in the dry soil failed to germinate and the seedlings were unable to endure the hot rays of the sun. But misfortunes never come singly. At the same time as severe heat was prevailing in the Alatau foothills, cold weather was being experienced in the mountains and this delayed the thawing of the glaciers. The rivers became extremely shallow and there was not enough water for irrigation. Nevertheless, the workers on a number of farms in the foothills did not lose hope. They planted their seedlings anew on the scorched fields -- yes and on more than one occasion. They used their water in a thrifty manner, selecting only the most economic types of irrigation. And they achieved their goal -- a fine crop is ripening out on the plantations. Although the harvesting of it has been delayed by 20-25 days, nevertheless with each passing day more and more cucumbers, tomatoes and other vegetables are being made available to the trade. The production line -- from the field to the store -- is being operated in a more intensive manner. The director of the Dzhanasharskoye Training Farm E.A. Khaziyeva is in a fine mood. Edward Akramovich points out the farm's fields with a great amount of satisfaction. In glancing at the emerald green vegetable plantations, it is difficult to imagine that only 2 months ago both the cultivated plants and the weeds had perished here. "I am presently sorting out in my mind everything that happened here during the drought" stated the director, "and I am left with a sense of admiration for and gratitude to our people. During a very difficult period, there was not one individual in the collective who acted in an indifferent manner. Each did everything within his power to help save the crop. Indeed, we had to devote some thought at the same time to the feeding of the livestock. Hence, only a portion of the water was used for irrigating the corn and grasses. And both tasks were solved but only as a result of all of the farmers displaying a responsible attitude towards the carrying out of their work. /by N. Moysa/ /Excerpt/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 Jul 82 p 1/ 7026

ADALA HARVEST SEASON--Alma-Atinskaya Oblast--The harvest season has arrived at Akdala. Here, four sovkhozes in Balkhashskiy Rayon are growing barley in rice crop rotation plans. This year 7,000 hectares have been set aside for it. The rayon's plans call for 22.5 quintals to be obtained from each such hectare. The harvest is at its peak. At the same time, other work continues unabated out on the Akdala tracts. The procurement of coarse feed is continuing and units for the preparation of vitamin grass feed are being operated at full capability. The irrigation specialists are exercising firm control over the rice plantations. The busy work period will commence here in just several weeks. /by D. Gutenev/ /Excerpts/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 21 Jul 82 p 1/ 7026

HIGHEST CROPPING POWER--Chimkentskaya Oblast--The highest cropping power for grain crops in Leninskiy Rayon was achieved by the collective at the Kommunizm Sovkhoz. First place in cropping power at the farm was won by the Section imeni Amangel'da. During the Tenth Five-Year Plan, the average grain yield was 21.2 quintals from each of 1,850 hectares and last year -- 31 quintals. Owing to the complicated conditions being encountered during this year's harvest operations, great importance is being attached to the skilful maneuvering of equipment. Thus the fields of the Section imeni Amangel'da ripened for harvesting earlier than all of the others, where the grain crops were just "preparing" to ripen. The equipment of all four detachments was immediately sent to the Section imeni Amangel'da. The machine operators required only 5 days to complete fully their harvest work. /by Yu. Livinskiy/ /Excerpts/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 21 Jul 82 p 1/ 7026

HIGH GRAIN YIELDS--Chimkentskaya Oblast--The harvesting of grain crops is in full swing in southern Kazakhstan. Many farms throughout the oblast have already completed this work. Included among them is the Kolkhoz imeni Tel'man in Saryagachskiy Rayon. The Kolkhoz imeni Tel'man is praised for its high grain yields. The grain growers are obtaining an average of 20-25 quintals of grain. The severe drought experienced this year precluded the possibility of the ears ripening fully. Despite the complicated weather conditions, the farmers succeeded in obtaining 13 quintals of grain from each hectare. This is a good indicator for this current year. It once again clearly confirms the mature expertise of the grain growers and the high agricultural practices employed in the cultivation of grain crops. The center of gravity of the harvest operations is presently shifting over to the threshing floor. The commodity grain is being processed and shipped to the procurement point and the seed stock -- to kolkhoz warehouses. Meanwhile the machine operators are making preparations to carry out their fall plowing work. Based upon their own experience, they are aware that such plowing produces a noticeable increase in yields. /by Yu. Livinskiy/ /Excerpts/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 23 Jul 82 p 1/ 7026

CSO: 1824/450

GRAIN PRESERVATION, STORAGE METHODS DISCUSSED

Moscow ZASHCHITA RASTENIY in Russian No 6, Jun 82 pp 20-22

/Article by L.A. Trisvyatskiy, director of the All-Union Scientific Research Institute of Grain and honored scientific figure of the RSFSR and G.A. Zakladnoy, head of a laboratory: "Reducing Grain Losses"/

> /Text/ The crain crop is ripening and soon the combines will move out onto the fields. At the present time, with the grain just about ready, the principal task is that of harvesting it without losses delivering it completely to the granaries and preserving it.

Wherever the grain supplies are stored, a most important national task is that of handling it correctly. Unskilled storage always results in losses which can reduce to zero all of the effort expended in raising and harvesting the crop. Factors which bring about such losses include unsatisfactory preparation of the harvesting and transport equipment, untimely post-harvest preparation of the grain for stable sotrage, weak storehouse base, violations of the recommended regimes, poor control over the condition of the batches of stored products and, finally, a shortage of specialists possessing a fine knowledge of the theoretical principles and the techniques and technology employed in the storage of grain products.

Among the diverse types of biological and mechanical losses, only a few can be considered as inevitable; the remainder are the result of incorrect handling of the grain and cannot be justified.

The so-called unaccounted for spillage which occurs during grain shipments is considered to be an inevitable mechanical loss in bulk. The expenditure of dry substance during grain respiration is considered to be the only justified loss of a biological nature. When the work is properly organized, these two types of losses are very negligible. And it has been the actual nature of these losses that has served as the basis for establishing the norms for natural losses in output during transport operations and storage.

Losses resulting from traumatic damage and spillage are fully preventable. More often than not they occur during harvesting of the crop, processing and transport operations. First of all the harvesting machines should be properly adjusted. This will make it possible not only to eliminate under-threshing but also to avoid crushing of the grain. This same approach should be employed for the transporting mechanisms and the grain cleaning equipment. Such simple measures as sealing the bodies of the motor vehicles and trailers and ensuring careful operation of the vehicles on rough roads are making it possible to eliminate spillage.

The observance of the grain storage regimes and technology dictated by the latest scientific and engineering achievements is making it possible to reduce considerably the losses of biological origin. First of all, immediately following the harvesting of the crop, the grain bulk must be processed (purified) in a timely manner for the purpose of removing all of the biologically active impurities and particularly the seed of weed plants, which usually have a raised moisture content and a great intensity of respiration. The variety of machines used for the purification of grain, included in a definite order in the technological plan, ensures the removal of a large portion of these impurities. Studies have shown that as a result of proper purification, the intensity of respiration of the grain bulk decreases by a factor of 4-40 and the danger of the process of self-warming occurring drops by a factor of 2-60.

A reduction in the moisture content of the grain to limits which ensure its reliable storage continues to be a most important task. In addition, drying makes it possible to reduce the losses in dry substances expended during respiration. A large portion of the grain must be dried not only in the northern and central regions of the country but also in the southern regions and during unfavorable harvesting conditions -- the entire crop harvested. The immediate drying of the seed is especially important. This makes it possible not only to lower their expenditures but also to raise their productive qualities.

Drying equipment and a technology have been developed based upon a study of the processes of heat and moisture exchange. Here a most important role is played by measures aimed at reducing the expenditure of energy for drying purposes.

The method of recirculation drying, involving the use of a high temperature drying agent (from 350 to 400°), is being employed extensively in our country. Compared to drying carried out using shaft or drum dryers, this method makes it possible to lower heat expenditures by 10-15 percent. Even higher technical-economic indicators are achieved when the grain is warmed in advance, prior to drying, in special heat exchangers installed above the dryers or alongside them.

At elevators, use is being made of recirculation grain dryers, with preliminary heating of the grain, having a productivity of 36-50 tons per hour (a unit is being developed which will have a productivity of 100 tons per hour). In addition, many dryers having a productivity of from 2 to 16 tons per hour are available at the kolkhozes and sovkhozes. Moreover, on farms, in addition to shaft type dryers, chamber dryers are being employed successfully where the work volume is small.

A study of the biological processes in grain products has shown that when the temperature of the environment and of the object itself drops to 10° or lower, the processes of gas exchange and heat production slow down sharply. The threat of self-warming occurring almost disappears, the vital functions of insects and micro-organisms cease and all life is found to be in a state of anabiosis or close to it. As is known, this can be achieved by means of forced ventilation (its rules have been developed and are well known). The principle of forced ventilation, for definite parameters of the air and grain bulk, should be employed extensively for the drying of grain.

During the past few years, more and more use has been made of artificially cooled air. The timely cooling of freshly harvested grain, using cooling plants, not only reduces losses in dry substances and delays the development of microorganisms but in many instances during processing it also makes it possible to obtain higher quality products. For example, more high grade groats are obtained during the processing of rice, a low acidic count for fat is maintained in the seed of sunflowers, castor oil plants and other oil-bearing crops and so forth.

The absence of oxygen in grain bulk and surrounding objects suppresses almost all life found therein. The oldest method for storing grain supplies in hermetically sealed containers, pits and trenches dug into the ground, and thereafter tightly covered, ensures the retention in the grain of its food and feed properties. If there is sufficient hermetic sealing and proper protection against ground waters, this method is more suitable than the maintenance of grain bulk on the earth's surface on exposed platforms (here the losses are usually greater). Unfortunately, a preference is very often shown for storage on platforms.

The method of maintaining grain in a non-oxygen environment, in hermetically sealed metal or other gasproof storehouses, also warrants attention. Storage carried out in such facilities involving the use of nitrogen and carbon dioxide or mixtures of them also appears to be very promising.

A great amount of effort has been expended in searching for scientific methods for protecting grain against mold fungi. In a number of countries, in order to protect grain that is to be used for cattle feed, use is made of mold inhibiting preparations -- propkorn, kemstor and luprosil, developed based upon the use of low-molecular carboxylic acids (formic, acetic, propionic and butyric). In the case of grain which has a high moisture content and is impossible to dry out or to cool sufficiently, these preparations fully prove their worth.

Studies carried out in recent years have furnished a greater appreciation of the importance of mold fungi. It has been proven experimentally that under definite conditions they are capable of producing very toxic mycotoxins which accumulate in an especially intensive manner during the self-warming process of grain, when free moisture is present in them. Only when excess moisture has been removed in a timely manner and incidents of self-warming have been eliminated can one be sure that the bread and feed grain have not acquired toxic properties and can be used as intended.

An important problem is that of combating insects and mites. The fauna of pests of grain, flour, groats and other agricultural products include several dozens of types of arthropodes.

The living conditions of representatives of pest groups which inhabit grain stores differ substantially from the living conditions of field pests. As a rule, grain bulk is maintained in closed facilities and in them, thanks to low heat and thermal-moisture conductivity, sharp fluctuations in temperature and moisture content are not observed. Usually the grain products are stored when they have a low moisture content. In areas where they are stored the lighting conditions as a rule are weak. Grain, being a favorable living environment for insects and pests, provides excellent food for them.

As a result of life under such conditions, the pests of grain stores have developed a number of common characteristics. The majority of the representatives of this group are characterized by an absence of diapause and can multiply and cause harm throughout the year. Moreover, they are distinguished by a brief period of ontogenesis and produce several generations annually. The duration of life for the males and females of a number of species is numbered in several dozens and even hundreds of days, with some pests being distinguished by a high level of fertility. Many of the insects are not very demanding in terms of moisture content in their environment, with some species being able to live in grain having a moisture content of 8-12 percent. At the same time, grain mites perish in an environment having a moisture content of 13.5 percent or lower. The majority of insects and mites which live in grain, during mechanical irritation, are able to pull in their legs and antennae and this saves them from damage during pouring of the grain. The overwhelming majority of the pests are covered by a strong chitinous layer, they are small in size and thus they can move about freely in the inter-grain spaces. The soft larvae (weevils, furniture beetles and some butterflies) develop within the grain and thus are saved from injury. The insects and mites fear bright light and thus conceal themselves in the grain bulk, in the cracks of storehouses and in other areas.

All of the pests of grain stores are distributed widely over the earth's sphere, they are distinguished by a high degree of adaptability to living conditions, by great fertility and rapid development and thus they can cause a tremendous amount of damage. For protecting grain and grain products against them, use is made of a complex of quarantine, preventive and destructive methods.

Possible Causes of Grain Losses During Storage

Biological

1. Respiration of grain
2. Germination of grain
3. Development of microorganisms
4. Development of insects and mites
5. Self-warming
6. Destruction by rodents
7. Destruction by birds

Mechanical

1. Injuries
2. Spillage
3. Scattering

Losses in Bulk

Deterioration in Quality

The quarantine measures are a function of a special service. Preventive and destructive measures are employed on grain products farms and enterprises.

The preventive measures are predicated upon three basic principals: thorough control over the condition of the various objects, the prevention of possible contamination and the creation of conditions which eliminate or limit the development of insects and mites. In the process it should be remembered that it is considerably easier to prevent contamination than it is to destroy the pests. The preventive measures must be carried out during all stages of the grain operations: during the harvesting, processing, storage, transporting and treatment periods. The complex of preventive measures should be carried out on grain products stored at processing enterprises, at kolkhozes and sovkhozes and within the trade and public catering system.

Prior to the commencement of the harvesting operations, the threshing floors and field camps at the kolkhozes and sovkhozes must be restored to the proper operating condition. The post-harvest residues should be burned and the soil from which they were obtained treated with pesticides. Cleaning and disinfection work must be carried out on the harvesting machines, grain cleaning and transporting mechanisms, packaging materials, implements, transport vehicles and granaries.

A mandatory condition when preparing the technical base for receiving the grain of the new harvest is that of complete decontamination of all objects. This disinfection must be carried out using the damp method and contact pesticides. Use is made for this purpose of DDVF, metation and volaton at a norm of 0.2 grams per square meter, Malathion insecticide -- 0.4 grams per square meter, trichlormetaphos-3 and aktellik at a norm of 0.6 grams per square meter of active agent (all recommendations are carried out in accordance with instructions and methods handed down by the USSR Ministry of Procurements).

Fine results have been achieved from the aerosol disinsection of granaries using "Gamma" cartridges at the rate of 0.25-0.5 grams per cubic meter with an exposure of 2 days (recommendations by the same sources).

Storehouses which can be hermetically sealed are best treated using the gas method and Preparation 242 at an expenditure norm of 15-20 grams per cubic meter and an exposure of 2-3 days.

An important condition for preventing spoilage in grain stores by pests is that of destroying waste products deemed unsuitable for economic use and storing forage in special facilities.

The land on which grain work is to be carried out must be well planned, packed down and asphalted. The grass must be systematically mowed or sprayed with herbicides. The soil must be well drained and the channels for water runoff must be maintained in proper working condition and regularly cleansed of all undergrowth and trash.

In order to ensure the safe storage of grain and grain products, use must be made of the reaction of pests to temperature and moisture conditions. The development of granary weevils and grain and mill moths is impossible at a temperature of 10^{o}, Angoumois grain moths and rice weevils -- 12^{o}, southern moths, confused flour beetles and Surinam meal beetles -- $14\text{-}15^{o}$, lesser grain borer -- 16^{o} and short-horned meal beetle -- 18^{o}. In the case of mites, moisture conditions serve as a restraining factor.

Taking into account the specific development of pests, any campaign waged against them must include the extensive use of purification, drying and cooling of the grain in conformity with the regimes already developed.

Prior to laying in grain for extended storage, especially seed grain, it should ideally be treated for preventive purposes using a contact pesticide. Towards this end, an RUP-2 spraying unit is employed for sprinkling a water emulsion on the grain while it is being placed on the conveyer unit. Malathion insecticide is used at a norm of 6-15 grams per ton, metation -- 10 grams per ton, DDVF -- 15 grams per ton and volaton -- 5 grams per ton (according to active agent), with the water consumption being approximately 0.5 liters per ton of grain (all recommendations in accordance with instructions and methods handed down by the USSR Ministry of Procurements). Following such treatment the residues of the preparation, which are toxic to the pests, remain on the caryopses for an extended period of time (up to 6 months or more, depending upon the expenditure norm for the pesticide and the temperature and moisture content of the grain).

Destructive measures are required once the insects or mites appear in the grain.

Bread and forage grain of a raised moisture content should ideally be decontaminated using the thermal method -- drying. However, the most radical and effective means for suppressing the pests is that of fumigation using methyl bromide, Preparation 242 and metal chloride.

When decontaminating bread and forage grain using methyl bromide, the preparation is released from cylinders into the air space above the grain. The expenditure norm is 60-70 grams per cubic meter of storehouse and up to 100 grams per cubic meter of elevator silo, with an exposure of 2-3 days.

Preparation 242 and metal chloride are employed for fumigation using both manual and mechanical means. When the manual method is used, bags are saturated with the fumigant and then suspended in the air above the grain. When Preparation 242 is used, the height of the grain heaps must not exceed 1.5 meters and metal chloride -- 2 meters.

Grain heaps which are more than 1.5 meters in height are fumigated with the Preparation 242 and using the mechanical method -- 2-AG and 4-AG units, which create a gas-air mixture and issue it by means of gas distributors into the grain heaps in storehouses. The expenditure norm for the preparation varies: for the fumigation of a heap that is 1.5 meters or more in height, 60 milliliters are expended per cubic meter of storehouse space occupied by the grain and 15-20 grams per cubic meter of above-grain space. For fumigating smaller heaps and the upper layer of grain, 25-30 grams of the preparation are used per cubic meter of the entire storehouse facility. The fumigation exposure is 3-5 days.

Seed grain is decontaminated using metal chloride, which does not affect its germinating capacity. The expenditure norm for it is up to 100 grams per cubic meter of space occupied by the grain and 30 grams per cubic meter of above-grain space. The exposure time is 3-4 days.

Bread, forage and seed grain can be disinfestated using phostoxin, which is released in the form of granules (weight of each granule is 0.6 grams). The granules are introduced into the grain on a conveyer belt using an automatic dosing apparatus. Aluminum phosphide, which is the base of the preparation, upon encountering grain or air moisture, releases hydrogen phosphide which kills the pests in the grain. The expenditure norm for the phostoxin is 18 grams (30 granules or 6 for hydrogen phosphide) per ton of grain. The exposure time is up to 5 days (all recommendations drawn from instructions and methods handed down by the USSR Ministry of Procurements).

Thorough hermetic sealing of the facilities is required in order to achieve good indicators for gas decontamination. For example, fumigation carried out in elevator silos using the methyl bromide method can be effective if during testing the pressure in it falls from 500 to 250 Pa's in not less than 14 minutes. When fumigating grain stored on open platforms or under sheds, it should be covered with gasproof plastic.

Degasification is carried out using the passive method -- with open windows and doors. In storehouses and elevator silos equipped with units for forced ventilation, the degasification is carried out with their assistance. In order to accelerate the process, the grain can be moved along on conveyer lines.

The sale of grain and grain products following fumigation is authorized in those instances where their pesticide content does not exceed the DOK /dopustimoye ostatochnoye kolichestvo; permissible residual amount/. Personnel are allowed to work in such facilities when the pesticide content in the air in the working zone falls to the PDK /predel'no dopustimaya kontsentratsiya; maximum permissible concentration/. The DOK's and PDK's for pesticides used in combating the pests found in grain stores are furnished in the following table.

Pesticide	DOK in the Products (milligrams per kg)	PDK in the Air in the Working Zone (milligrams per cubic meter)
Volaton	0.6 (grain)	0.3
DDVF	0.3 (grain, bran)	0.2
Malathion insecticide	3.0 (grain, pulse crops 2.0 (flour) 1.0 (groats, in addition to manna, bread	0.5
Metation	1.0 (grain) 0.3 (flour) 0.1 (bread)	0.1
Trichlor-metaphos-3	0.5 (grain)	
Methyl bromide	35.0 (grain) 20.0 (flour, groats; for non-organic bromides)	1.0 50.0 (following the fumigation of enterprises)
Metal chloride	3.5 (grain, pulse crops)	-
Preparation 242	2.0 (grain)	-
Hydrogen phosphide	0.01 (grain)	0.1
Atrazin	0.1 (grain)	2.0
Herbicides groups 2.4-D	Not permitted	
Simazin	1.0 (grain)	2.0

Among the latest methods employed by us for the very first time on an industrial scale, mention should be made of the radiation fumigation of grain (at the Odessa Port elevator). This unit, based upon the use of electron accelerants, makes it possible to fumigate grain while it is being unloaded from the holds of ships or upon being issued from an elevator building. The treatment of grain with an electron beam having an electron energy of 1.4 million electron-volts, in a dosage of 20-40 krads, immediately terminates propagation of the pests and accelerates their dying off.

All of the fumigation work must be carried out by specially trained personnel, with all safety measures being observed in a strict manner.

The principal measures employed against mouse-like rodents include the erection of rat-proof storehouses, the eradication of the animal nesting areas and the elimination of water sources. Included among the destructive measures are catching the animals, fumigating the facilities and animal burrows and also employing poisonous lures.

Grain loving birds, especially sparrows and pigeons, should be prevented from entering the storehouses and grain stored on platforms should be covered so as to prevent them from gaining access to the grain.

7026
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LIVESTOCK FEED PROCUREMENT

LIVESTOCK FEED SITUATION IN UKRAINE REVIEWED

Kiev SIL'S'KI VISTI in Ukrainian 22 Jul 82 p 2

[Article: "More Feed to Livestock Units"]

[Text] Livestock productivity in winter, and also the level of supply to the general public of milk, meat, and other products depend on how much feed stores have been established. Agricultural workers are presently in a period of intensive work. Laying away feed is coinciding with care of crops and harvesting.

Excessive rainfall in June and the first half of July had a negative effect on progress in putting away feed. As of 19 July 1982 a total of 5.1 million hectares of natural and sown grasses had been cut, or 81 percent of the plan target -- 0.5 million hectares less than by this time last year.

The farms of Voroshilovgradskaya, Dnepropetrovskaya, Donetskaya, Zaporozhskaya, Kirovogradskaya, Odesskaya, Khar'kovskaya, and Khersonskaya oblasts have completed the first hay cutting.

Three years ago the kolkhozes and sovkhozes of Voroshilovgradskaya Oblast were the first in the republic to pursue the aim of sharply increasing stores of hay and other feeds. And they were on the right track. Milk yields and livestock weight growth increments increased appreciably in this oblast. Time confirmed that this was not simply a one-time "campaign." Since that time the overwhelming majority of farms have been overfulfilling each year the targets for accumulating this feed. This year as well the farmers of Voroshilovgradskaya Oblast were the first in the republic to achieve the plan target for harvesting hay, putting away 218,000 tons.

The kolkhozes and sovkhozes of Belokurakinskiy, Lukovinskiy, Sverdlovskiy, Slavyanoserbskiy, and Stanichno-Luganskiy rayons of this oblast already have put away 110-130 percent of the targeted quantity of hay for winter.

Farm managers in Voroshilovgradskaya Oblast are making every effort to ensure that drier units for producing grass meal operate at a high-productivity level. Grass meal is being produced in an organized manner on the Novopskovs'kyy Sovkhoz. An SB-1.5 drier unit, operated by 6 workers, headed by operator I.T. Lobarev, is working two shifts. They are producing 12-14 tons of granules here daily -- 120 percent of the specified target. Since the beginning of the season they have processed 430 tons of moisture-removed feed, or 110 percent of plan. Wages depend on feed quality, for which samples are taken each shift and sent to the laboratory for analysis. Of the total quantity of grass meal, 330 tons were top grade, 77 percent; the remainder was grades 2 and 3. A good job has been done by the AVM-0.65 unit on the Rodina Kolkhoz in Starobel'skiy Rayon, operated by D. M. Velychko. With a target of 220 tons, they have already processed 311 tons of moisture-removed feed.

The farms in Krymskaya, Kirovogradskaya, and Donetskaya oblasts are close to fulfillment of the hay production plan. The farms in Volynskaya and Rovenskaya oblasts are increasing hay stocks in exceptionally adverse weather conditions. Many kolkhozes and sovkhozes in these oblasts have erected sheds and have even adapted unoccupied livestock buildings for completing hay drying.

Up to the present time 2.9 million tons of hay has been put away for the republic as a whole -- 50 percent of the plan target. In Zakarpatskaya, Chernigovskaya, Khmel'nitskaya, Sumskaya, and Ivano-Frankovskaya oblasts hay has not yet been cut on 31-47 percent of hayfield acreage. The optimal time is coming to an end, while on many farms in these oblasts the pace of cutting and putting away feed is slow. A large number of kolkhoz chairmen, sovkhoz directors and their deputies for feed production have been unable to reorganize the work schedule under rainy weather conditions. Science and practical experience have confirmed that late harvesting has a negative effect on grass development. Grasses grow poorly and die rapidly, and the second cutting is virtually lost. Weeds abound on such acreage. Protein and carotene quantity is reduced in perennial grasses.

In the last week only 3-6 percent of acreage in grasses has been cut in L'vovskaya and Sumskaya oblasts. If they continue harvesting at this pace, it will take another 3 to 5 weeks to complete this work.

There has been considerable delay in laying away feed stores for the winter in Ternopol'skaya Oblast. Farms have failed to accomplish the first cut on 30 percent of targeted grass acreage. Production is less than last year, as follows: hay -- by 57,000 tons; haylage -- by 128,000 tons; grass meal -- by 5000 tons. Officials of agricultural agencies and the majority of kolkhozes and sovkhozes explain that this is due to unfavorable weather. It is true that there has been considerable rainfall. Some farms, however, such as the Kolkhoz imeni Radyans'ka Armiya in Kremenetskiy Rayon, for example, have countered the adverse weather with excellent organization of labor and have extensively employed advanced feed production techniques. They have dried hay under sheds with the aid of active ventilation, and have processed haylage. They have already produced 163 percent of the hay target and 110 percent of the haylage target. But the know-how employed by this kolkhoz has not been adopted by all farms in the oblast.

The most critical period in harvesting, processing and putting away feed is now with us. Another task to be accomplished now is that of completing as rapidly as possible the first hay cutting and proceeding to the second. It is essential that all kolkhozes and sovkhozes in the next two days review their daily and weekly schedules for putting away feed and modify them taking into account maximum return on technical measures.

We should make sure that each drier unit produces not less than 7-8 tons of grass meal per day. In haylage preparation it is essential to ensure that each pickup-grinder handles not less than 20 tons of bulk haylage per day.

To achieve this, each and every farm must arrange and place equipment and transport vehicles correctly and with maximum efficiency, and organize with precision the operations of feed-production detachments and brigades. Farm heads and their deputies for feed production must bear personal responsibility for this.

The experience of leading farms attests to the fact that an advantage in producing and putting away feed is gained by he who performs these operations as an aggregate, at a rapid pace and in all weather, maximally utilizing each and every hour for accumulating hay and haylage, and who flexibly and efficiently shifts personnel and equipment to ensiling grasses and producing grass meal when it is raining.

In addition to preparing hay, haylage and moisture-removed feeds, it is important to collect straw in a timely manner and without losses, as straw comprises a large percentage in the feed balance. We are already receiving indications, however, of a poor management attitude toward this feed source. On the Druzhba and imeni Gor'kiy kolkhozes in Ivanovskiy Rayon, Odesskaya Oblast, winter barley has been cut at 20-25 centimeters, which has led to loss of more than 3 quintals of straw per hectare.

Particular attention should be focused on putting away high-quality feeds. According to laboratory analysis data, farms in Voroshilovgradskaya Oblast, Dnepropetrovskaya, and Donetskaya oblasts have such feeds, where 90-97 percent of the hay is grade 1 and 2, with 96 percent for bulk silage, and 74-94 percent for haylage.

A number of kolkhozes and sovkhozes in Krymskaya, Odesskaya, and Cherkasskaya oblasts, however, do not always adhere to the proper techniques of processing and storing feed, because on these farms 7-10 percent of hay, 5-17 percent of haylage, and 4-14 percent of grass meal has proven to be poor-quality. Farm officials and specialists, with the aid of animal husbandry analysis laboratories, are obliged rigorously to monitor feed quality.

It is very important to prepare in a prompt and expeditious manner to ready and put away silage from corn and other crops. On a number of farms in Zaporozhskaya, Dnepropetrovskaya, Kiyevskaya, and Sumskaya oblasts, however, the silage harvesters are not yet ready for the harvest. In Voroshilovgradskaya, Zhitomirskaya, Kiyevskaya, Ivano-Frankovskaya, and Poltavskaya oblasts the 6-months target for construction of permanent silage and haylage storage structures has been achieved by only 14-51 percent. And yet silage quality will depend in large measure on this.

Harvesting and preparation of feed is an urgent task. Party and soviet agencies must keep an especially close watch on this work.

3024
CSO: 1811/53

LIVESTOCK FEED PROCUREMENT

LAGGING FEED PROCUREMENT PROBLEM IN LATVIA

Riga SOVETSKAYA LATVIYA in Russian 7 Jul 82 p 1

/Article: "Chief Concern of the Day"/

/Text/ A meeting of the republic's staff for feed procurements was held in Riga on 6 July. A maximum amount of attention was given to the problems concerned with the tempo and quality of the green harvest. These vital problems were examined in light of the tasks assigned to our republic by the food program of the USSR.

The staff meeting was opened by its chief, secretary of the Central Committee of the Communist Party of Latvia V.A. Chemm. The 1st deputy chairman of the Council of Ministers of the Latvian SSR, R.O. Verro, participated in the work of the staff.

The republic's minister of agriculture, K.A. Shpogis, analyzed the course of the feed procurement work and he singled out the weak work being performed during the green harvest by the farms in Ventspilsskiy, Gulbenskiy, Kuldigskiy, Ludzenskiy and certain other rayons. He directed attention to the sharp contrasts during the procurement work at kolkhozes and sovkhozes from the standpoint of rayons and to the lack of responsibility still being displayed by the leaders of a number of farms. In particular, the minister placed special emphasis on the quality of the harvest, on preventing fodder losses, on the use of preservatives and also on the immediate tasks confronting the farmers.

Reports were delivered on the course of the feed procurement operations by the chairman of the Gulbenskiy Rayon Agroindustrial Association E.V. Ziberg and the chairman of the Ventspilsskiy Rayon Agroindustrial Association G.U. Grinberg. The director of the Stari Sovkhoz in Gulbenskiy Rayon, G.V. Blums, delivered a report on the use of progressive methods for organizing the mass procurement of feed.

During the staff meeting it was noted that many farms in Gulbenskiy and Ventspilsskiy Rayons are intolerably slow in carrying out their feed procurement work. By 6 July in Ventspilsskiy Rayon, perennial and natural grasses had been cut down on only 56 percent of the planned areas and in Gulbenskiy Rayon -- on 50 percent. And in both Ventspilsskiy and Gulbenskiy Rayons, a serious lag had developed in the procurement of hay. As yet, only 15 and 8 percent respectively of the amounts planned have been laid away. The storage of haylage in trenches is proceeding very slowly. The farms in Ventspilsskiy Rayon have not succeeded in achieving the required tempo for the production of artificially dehydrated feed. The productivity of units for the preparation of grass meal at kolkhozes and sovkhozes in Gulbenskiy Rayon is low.

The speakers noted that many enterprises and organizations in Ventspils and in Oktyabr'skiy Rayon in Riga have still not succeeded in organizing effective assistance for the farms in the carrying out of one of the most important agricultural campaigns of the year -- the green harvest.

The chairman of Toskomsel'khoztekhnika for the Latvian SSR, N.A. Babkin, spoke out on the problem of improving the work of the republic's raysel'khoztekhnika collectives.

In the decision handed down by the republic's staff with regard to increasing the production of livestock products and creating the necessary feed supplies for the 1982-1983 wintering of the livestock and in the interest of accelerating the feed procurement rates and raising the quality of the feed, it was proposed that the Ministry of Agriculture for the Latvian SSR and the rayon agroindustrial associations implement improvements in the organizational work and raise the tempo of the feed procurement work. A requirement also exists for raising the exactingness of the farm leaders in connection with the organization of feed procurement operations, especially hay, the extensive use of progressive technologies and leading experience, the use of chemical preservatives in all areas and ensuring the maximum utilization of material and labor resources for procuring the established amounts of all types of high quality coarse feeds. Improvements must also be achieved in the effectiveness of all of the feed procurement equipment and AVM's /forced ventilation machines/. The work of the AVM's must be organized such that they are in operation for not less than 20 hours daily and a reduction must take place in the idle time of the units. The technology for preparing dehydrated feed and achieving fuel economies must be followed in a very strict manner.

Importance is attached to improving immediately the utilization of internal labor resources and ensuring that no less than 50 percent of the farm workers participate in the feed procurement operations. In all areas, the populations of settlements and rayon centers should be attracted to participating in the feed procurement work. As rapidly as possible, improvements should be realized in the level of labor organization and in the utilization of manual and office workers from supporting enterprises and organizations who come to assist in the work.

All those participating in the green harvest must be enjoined to combat losses during the harvesting and transporting of the feed. In order to raise the interest of those participating in the feed procurement work, extensive use must be made in all areas of all forms and methods for issuing moral and material incentives. In accordance with agreements reached, the municipal and rayon party committees must arrange for the transporting to the kolkhozes and sovkhozes of the manual and office workers from industrial enterprises and organizations. In July, weekly trips to the farms must be organized for workers from enterprises and organizations so that they can make their contribution to the work and strict contol must be exercised over the manner in which the people sent to help out in the rural areas are utilized.

Goskomsel'khoztekhnika for the Latvian SSR must raise the efficiency of the technical services being provided, eliminate breakdowns and defects in the feed procurement equipment and also achieve a higher level of technical readiness for the AVM's. The repair or replacement of defective electric motors must be carried out in an efficient manner.

The State Committee for Petroleum Products of the Latvian SSR must ensure regular shipments of the required amounts of fuel and lubricating materials to the kolkhozes and sovkhozes. The staff approved the experience accumulated in organizing feed procurement operations at the Stari Sovkhoz in Gulbenskiy Rayon and recommended that it be employed on other farms throughout the republic.

7026
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LIVESTOCK

PROGRESS, PRESENT STATUS OF USSR POULTRY INDUSTRY

Moscow EKONOMICHESKAYA GAZETA in Russian No 31, Jul 82 p 2

/Interview with I. A. Bakhtin, chief of the USSR Ptiseprom: "Development of Industrial Poultry Raising"; date and place not given/

/Text/ /Question/ Ivan Aleksandrovich, what does the Ptiseprom /Administration of the Poultry Raising Industry/ system now represent and what quantity of output does it give to the state? What has been done in the last few years to transfer poultry raising to an industrial basis?

/Answer/ A total of 1,200 big poultry factories and pedigree farms were built and reconstructed in the country during the period following the organization of the Ptiseprom system (1964). About 15 billion rubles of capital investments were spent on these purposes and just as much profit was obtained during that time, that is, the invested funds were recovered fully.

In the Ptitseprom system there are 948 poultry factories, 234 poultry sovkhozes, 68 pedigree plants, 187 reproducer farms and 12 scientific research institutes, selection and genetics stations and experimental farms. Furthermore, the Ptitseprom system includes 532 incubator poultry raising stations, which are engaged in egg incubation and in the sale of young stock to the population, to kolkhozes and to sovkhozes.

Along with poultry breeding the processing of the sector's own output is also being developed. A total of 11 shops for the preparation of egg powder now operate in the sector. Last year they produced 4,500 tons of egg powder. In the future this production will be developed more energetically, because in the current year the enterprises of the Ministry of Machine Building for Light and Food Industry and Household Appliances have begun the series production of equipment that is reliable and convenient in operation. The production base for poultry processing is also being developed. About 500 slaughter shops, which process approximately 60 percent of their own raw materials, now operate in the Ptiseprom system. In the current year Ptiseprom enterprises will produce gross output in the total amount of 7.5 billion rubles.

The population's demand for poultry output is growing constantly. Therefore, we consider it our duty to develop poultry breeding not only at our system's enterprises, but also on kolkhozes, sovkhozes and the population's private subsidiary farms. The enterprises of the Ptitseprom system annually increase the sale of 1-day old stock to them. Last year 630 million chicks were sold.

/Question/ What tasks are set for the sector by the decisions of the May /1982/ Plenum of the CPSU Central Committee? What is the contribution of Ptitseprom enterprises and organizations to the USSR Food Program?

/Answer/ The food program envisages increasing the average annual egg production to 72 billion during the 11th Five-Year Plan and to 78 or 79 billion during the 12th Five-Year Plan.

As before, Ptitseprom farms will play a leading role in the accomplishment of this task. In 1985 they are to increase the annual egg production to 45 billion and in 1990, to 52.6 billion. Ptitseprom enterprises are to produce 1.6 million tons of poultry meat in 1985 (in carcass weight) and 2.4 million tons in 1990.

These volumes of egg and poultry meat production are secured with real resources and capital investments and, therefore, do not evoke any doubts.

Our enterprises right now have a powerful production base fitted with modern technological equipment and valuable pedigree stock and are staffed with highly skilled personnel. A total of 241 enterprises, including 74 poultry factories of egg specialization of a total planned capacity of 17.3 million laying hens, 110 enterprises of meat specialization of a total annual capacity of 343 million head of meat poultry and 57 pedigree farms for 5 million head of poultry of various types of productivity, are now at the stage of construction and expansion. All of them will be put into operation during the current five-year plan and this will make it possible not only to ensure the fulfillment of the volumes envisaged for 1985, but also to make a construction start for the 12th Five-Year Plan.

Measures have been outlined for the further increase in the productivity of poultry and a rise in the density of its placement per square meter of useful area through the introduction of new technological equipment placed in series production.

/Question/ How is broiler production to be developed so that the sector may reach the level envisaged in the food program?

/Answer/ Broiler production is a new specialization in the sector. It has a number of specific characteristics as compared with egg production. This more complex and delicate endeavor requires a faultless fulfillment of veterinary-sanitary and technological rules.

Two special breeds, from which, by means of crossing, four line hybrids possessing a high growth energy are obtained in the end, are the basis for broiler production. The hybrid chick--broiler--is the final product and, before it is obtained, it is necessary to establish the appropriate capacities of reproducer farms, where a successive double crossing of the indicated breeds will be carried out. Crossing techniques have been well mastered and offer no special difficulties.

Broilers can be raised not only at specialized meat enterprises, but also at kolkhoz and sovkhoz sections, as well as on the population's private subsidiary farms. Standard plans for reproducer farms of a varying capacity and for broiler poultry factories for 3, 6 and 10 million head annually have now been developed and approved.

Cage broiler breeding is becoming widespread on our farms, because it has a number of advantages as compared with the floor method. First, the density of placement of broilers per square meter of floor area of a poultry house is doubled (35 instead of 18 are placed), feed expenditure per kg of gain is reduced by 20 percent and the possibility of disease among chicks is ruled out.

A total of 700,000 tons of broiler meat, including 40 percent in cage batteries, will be produced at the broiler poultry factories of Ptitseprom. In 1985 production is to be increased to 1 million tons. Along with this cooperation in broiler raising with kolkhozes and sovkhozes will be developed on a wider scale.

/Question/ Tell us about the sector's internal potentials connected with an economical expenditure of feed and the shortening of poultry fattening periods.

/Answer/ First of all, let us discuss the expenditure of feed on egg production. A total of 2.04 kg of fodder units were expended on the production of a dozen eggs throughout the USSR Ptitseprom system in 1981, which was 40 grams less than during the preceding year. Of course, the result attained would have been more impressive if existing potentials had been more fully utilized at all poultry breeding enterprises.

For example, poultry breeders in Belorussia, Lithuania and Estonia were able to attain an expenditure of 1.85 kg of fodder units per dozen eggs. At the same time, an inadmissibly big expenditure of feed is allowed at poultry factories in the republics of Central Asia and the Transcaucasus. For example, 3.99 kg of fodder units are expended in Turkmenia, 2.79, in Azerbaijan and 2.93 in Armenia. The managers of poultry factories that allowed a big expenditure of feed attribute this fact mostly to the low quality of mixed feed. Of course, the quality of mixed feed is not the same everywhere, but the reason lies not only in it, but mainly in considerable violations in the technology of poultry raising and keeping, in the existence of dangerous diseases and in the increased waste of young stock.

Unfortunately, there are also significant differences in feed expenditure in broiler production. On the average, on Ptitseprom farms last year feed expenditures per kg of gain were 4.2 kg of fodder units, that is, 110 grams less than in 1980. Advanced broiler poultry factories--Kayshyadoris and Vil'nyus in the Lithuanian SSR, Druzhba in Brestskaya Oblast and others--expend 2.6 to 2.8 kg of feed per kg of gain.

Unfortunately, among broiler enterprises there are enterprises that expend 5 to 6 kg of feed and obtain output whose production costs are twice as high as that at advanced poultry factories. They are Gamardzhvebskaya in Georgia, Dobrinskaya in Lipetskaya Oblast, Buynakskaya in Dagestan and some others.

By the end of 1985 a total of 40 percent of the processed poultry is to be produced in eviscerated form, which will greatly increase raw material resources for the output of protein feed. The shortage of equipment for the evisceration of poultry and of kettles for the preparation of meat and bone meal is a deterrent in this matter.

/Question/ What hampers the further increase in the sector's efficiency?

/Answer/ Many factors negatively affecting the efficiency of operation of poultry breeding can be mentioned. The shortage of containers for the packaging of eggs and dead poultry and the lack of balance of feed rations in the basic irreplaceable amino acids--lysine and methionine--are the main ones. Is it necessary to comment on the problem of containers if it is clear anyway that eggs and meat are perishable products and they can be packaged only in special containers and boxes, of which there is a chronic shortage.

With regard to the lack of balance of rations in the above-mentioned amino acids, it is a matter of a considerable increase in their production at the enterprises of the Ministry of Chemical Industry and of the Main Administration of the Microbiological Industry. The volume of production of these acids is now so small that it does not have a marked effect on the quality of mixed feed. The same can be said about biologically active substances, without which it is impossible to ensure a high productivity of poultry and the preservation of young stock.

Broiler poultry factories are constantly short of so-called santokhin. Its absence in feed causes a significant waste of chicks. A total of 2,500 tons are needed annually. The Ministry of Medical Industry allocates 250 tons, that is, 10 percent of the need. We have already discussed the kettles for the preparation of meat and bone meal. From 80 to 90 units are annually allocated to us, which hardly ensures the outfitting of new factories under construction.

/Question/ Tell us about the cooperation within the CEMA framework in the area of industrial poultry breeding and what effect does it produce?

/Answer/ Scientific and technical cooperation is carried out with many CEMA countries. However, most actively it is developing with poultry breeders in the Hungarian People's Republic, the GDR and the People's Republic of Bulgaria. For example, 5,500 sets of different poultry breeding equipment were received from the Hungarian People's Republic and the GDR during the years of cooperation, which made it possible to additionally place 50 million head of poultry and to produce 11 million eggs. We have received equipment for commodity egg processing from Bulgaria in the last few years.

In turn, the USSR shares its technology in poultry breeding and results in selection work with fraternal countries.

Two broiler poultry factories of an annual capacity of 10.6 million head each and two pedigree enterprises for 400,000 meat chickens each are being built with the technical assistance of the Hungarian People's Republic. Last year all the enumerated enterprises began to partially produce output and this year they will be running at the designed capacity. The Hungarian side supplied poultry houses, equipment, 1-dayold chicks and feed premixes for the projects under construction.

This year both broiler poultry factories will produce 23,000 tons of meat and pedigree farms, 60 million pedigree eggs for incubation. Along with this we constantly exchange scientific information and valuable genetic stock.

/Question/ What are the results of work during the first half-year?

/Answer/ The planned assignments for the production and purchases of poultry products established for 1982 are being fulfilled successfully.

During the first half-year, as compared with the same period in 1981, the production of eggs increased by 740 million and of meat and poultry, by 85,000 tons, including of broiler meat, by 60,000 tons.

A total of 24.6 billion eggs, that is, 708 million more than during the first half-year of 1981, were supplied to the trade network. A total of 915,000 tons of poultry meat, that is, 90,000 tons more than last year's level, were sold. The production of poultry meat and its direct delivery to the trade network in a semieviscerated and eviscerated form were increased.

Quite a good reserve for a stable operation of the sector's poultry breeding enterprises during the second half-year was created. The stock of poultry of all ages increased by 16 million head and its productivity rose slightly. Our calculations show that 46.3 billion eggs and 1,838,000 tons of poultry meat will be delivered to the table of our country's workers during the second year of the five-year plan, which is much more than last year.

The collectives of Ptitseprom enterprises and organizations inspired by the decisions of the May (1982) Plenum of the CPSU Central Committee have expanded the competition for a prescheduled fulfillment of the plans and socialist obligations of the second year and of the 11th Five-Year Plan as a whole in order to make a worthy contribution to the fulfillment of the food program.

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LIVESTOCK

EXPANSION OF POULTRY PRODUCTION IN SIBERIA, FAR EAST

Moscow PRAVDA in Russian 9 Jul 82 p 2

/Article by S. Vtorushin, Novosibirskaya Oblast: "In a Single Complex"/

/Text/ The factory and the settlement are spread on both sides of the superhighway. On the one hand there are new five-story houses and on the other, production buildings. Yu. Volkov, deputy director of the Poultry Raising Industry Trust, said the following:

"Not long ago we did not even visualize that in poultry raising it is possible to attain such a high degree of industrialization..."

In the last few years this sector has reached a new level in Siberia. Powerful factories producing eggs and broiler meat have appeared in Tyumenskaya, Kemerovskaya, Omskaya, Tomskaya and other oblasts. From the time of its establishment the Novosibirsk Ptitseprom /Poultry Raising Industry/ Trust increased the volume of production almost ten times.

The construction of factories greatly contributed to success. There are three of them in the trust. In 1981 they delivered one-half of all the eggs and one-third of the poultry meat from the output of 20 farms of this trust to the tables of city dwellers. The Yevsinskaya Factory alone produced 90 million eggs and about 1,000 tons of meat. During the year the enterprise obtained 1.5 million rubles of profit.

A bigger factory is located not far from the oblast center, in the settlement of Chik. Its collective annually sells about 140 million eggs. When the enterprise reaches the planned capacity, it will almost double the volume of production.

However, poultry raising in Novosibirskaya Oblast is developing not only through the construction of large projects. The capacities of specialized sovkhozes are being reconstructed and expanded. Such sovkhozes as Tal'menskiy, Shibkovskiy and some others are not inferior to factories in their technical level.

For example, 60 million eggs are annually produced on the Tal'menskiy Sovkhoz. Furthermore, there is a big herd of cows here and annual milk yields per cow are more than 4,000 kg.

The sector's transfer to industrial technology will make it possible to reduce feed expenditure. Whereas previously the production of 1,000 eggs required 410 kg of feed, in 1981 a total of 188 kg were consumed. The amount of concentrates was also reduced by one-half when poultry was fattened for meat.

City dwellers provided great assistance in this. Many industrial enterprises and construction organizations in Novosibirsk have good patronage relations with rural areas. In the last few years alone plant workers have built 63 standard poultry houses. I had occasion to visit the Shibkovskiy Sovkhoz.

"Our patron, the Khimelektromontazh Trust, prepared 13 poultry houses for duck raising," director G. Vargentin said. "Owing to this last year alone we increased meat production by 300 tons."

A few more poultry houses are now being equipped on the sovkhoz. Other potentials are also being sought here. On the farm territory there are convenient reservoirs rich in natural feed. Last year, as a result of their utilization, 400 tons of inexpensive duck meat were obtained. It is possible to double its production and to increase its delivery to 2,000 tons. There are three such sovkhozes in the trust. Soon they should annually produce 6,000 tons of duck meat.

The people of Novosibirskaya Oblast also have a very big breeding herd of geese. Several incubation stations have been built in the regions of the Kulunda zone, as well as of Baraba, which is rich in lakes. In 1981 they sold 1.5 million geese to kolkhoz members and sovkhoz workers. In all the trust sold 5.6 million chicks and geese to the population. This figure is now to be increased to 6 million.

The sector's achievements, as the saying goes, are on hand. However, they are only the first steps along the path of its formation. Whereas the people of Novosibirskaya Oblast have attained quite good indicators in egg production, one cannot say this about poultry meat. Poultry makes up about 6 percent in the total volume of its sale. The USSR Food Program approved at the May (1982) Plenum of the CPSU Central Committee states that Siberia and the Far East should ensure a reliable supply of food products for the population basically through local production.

A decision on the construction of a powerful broiler factory in the settlement of Kochenevo was adopted more than 10 years ago. The general contractor--the Sibakademstroy Administration--was also determined. However, everything was done there to "disown" the project, which seemed too labor-intensive. The construction of the Kochenevo Broiler Factory has not begun to this day.

It must be stated that builders often seem to put Ptitseprom projects on the list of secondary projects. The same Sibakademstroy laid the foundation of the abovementioned Chik Factory 8 years ago. According to the plan, work was to have been completed in 1977. However, the contractor promises to complete it only in 1984.

The Oblsel'stroy Trust has been building the projects of the Novosibirsk State Pedigree Stock Plant. The enterprise should have reached the planned capacity a long time ago. However, construction has not been completed to this day. But the state pedigree stock plant should supply pedigree eggs to all the factories and poultry raising farms of neighboring oblasts. The subdivisions of the Main Novosibirsk Construction Trust work better than others at Ptitseprom projects. However, nor do they keep within standard periods.

In order to increase meat production, the trust reoriented some of its farms. For example, broiler meat, instead of eggs, is to be obtained at the Sosnovskoye Department of the Tal'menskiy Sovkhoz. The Toguchin Factory is also being completely transferred to broiler production. By the end of this five-year plan it should annually produce 2,500 to 3,000 tons of meat. Meanwhile, specialists believe that much bigger volumes are within the reach of this enterprise.

There is a good long-established collective here and the settlement has a kindergarten and an excellent trade center. The production base is also being strengthened. A powerful shop for the preparation of mixed feed has been commissioned recently. A shop designed for the processing of 8,000 chickens in a shift will be completed soon.

"If we succeed in solving the heat problem and in slightly expanding production," A. Filatov, the factory director, believes, "we could increase meat production significantly in the very near future."

There is no boiler room at the poultry factory. Every block is heated by a portable heat generator operating on diesel fuel. Energy losses are big and, at the same time, it is impossible to obtain normal weight gains in chicks and to consume feed efficiently.

A boiler room was begun to be built at the poultry factory a few years ago. Then builders abandoned the project. Since then the Ptitseprom Trust has not been able to solve the problem of normal heat supply for this enterprise. Yet here it is possible to increase poultry meat production rapidly and in significant quantities.

The construction of the Novosibirsk Broiler Factory was begun in 1980. Its first stage was to be commissioned in 1983. However, last year builders utilized only 2.3 out of 3 million rubles. For one mobile mechanized column, which has been occupied there until recently, the commissioning dates are obviously unrealistic.

As was noted at the May Plenum of the CPSU Central Committee, an accelerated development of the agroindustrial complex is the most important economic and political task of the day. Builders must take a more active part in this.

The oblast's poultry breeders have many claims against some republic and Union organizations. Multi-story settlements are planned near large factories. This often deprives people of the possibility of engaging in private subsidiary farming.

Poultry raising has become industrial in the broadest sense of the word. The sector's power saturation is quite high. For example, on the territory of the Yevsinskaya Factory more than 70 km of various pipelines have been laid and 3,000 electric motors operate in shops. However, there are neither specialists, nor the appropriate equipment for the repair of such a number of machines and systems. Nor does the factory have funds for spare parts.

Relations with mixed feed industry enterprises have not yet been adjusted. The feed that is received often does not correspond to standards. Factories and sovkhozes reprocess it at their shops.

Not all enterprises have their own slaughter shops. Many are forced to deliver poultry to the Novosibirsk Poultry Combine. During transportation chickens and ducks lose up to 15 percent of their weight. Furthermore, the waste formed during slaughtering is not utilized. This is a very significant protein addition to a poultry ration. The situation with egg containers in the trust is difficult. Enterprises in the cities of Kzyl-Orda and Tuymazy, which manufacture them, often disrupt deliveries. Sometimes several million eggs accumulate at factories pending sale.

Poultry raising is an important and, perhaps, the most efficient animal husbandry sector. As local experience shows, the construction of a broiler factory of an annual capacity of 9,000 tons of meat is repaid in only 2.6 years. It is necessary to carry out work at this important section more persistently and successfully.

11,439
CSO: 1824/456

ESTONIAN SIX MONTH SUMMARY FOR MILK, LIVESTOCK PRODUCTION

Tallinn SOVETSKAYA ESTONIYA in Russian 15 Jul 82 p 1

/Article: "Up Ahead -- A Decisive Period"/

/Text/ The first six months produced many concerns for the republic's field crop growers. The cool and rainy weather did not favor the growth of the field crops and in fact it complicated the work out on the fields. Inspired by the decisions handed down during the May Plenuj of the CC CPSU, sensing national support and overcoming the caprices of nature, the farmers directed all of their efforts towards carrying out the tasks assigned to them. July is the final month for feed procurements. Thus everything must be done at the present time to ensure that the harvest from the grass lands reaches the feed storehouses in the form of hay, haylage, silage and grass meal. This year the grass harvest is not one of the best. The first cutting did not produce the amount of feed expected. Now, to the degree that it is possible, a maximum amount of grass must be obtained from the second and third cuttings over large areas.

On weekends, special feed procurement work is carried out by Saturday and Sunday workers throughout the republic. During just 2 days of such shock work, more than 50,000 individuals laid away in excess of 71,000 tons of grass feed for winter storage, including almost 40,000 tons of high quality hay (almost 9 percent of the plan). Such intensity and tempo must be maintained during the forthcoming shock work days for feed procurements and also during the harvesting of the crops, which will commence shortly out on the republic's fields.

The republic's livestock producers did not fulfill their tasks for the first 6 months with regard to the production and sale of milk and meat to the state. The amount of milk procured was 83,880 tons (15 percent) less than that for 1 year ago and livestock and poultry -- 20,134 tons (18 percent) less. This is borne out by the fact that there is a shortage of meat and dairy products in the stores at the present time. The six-month plan for the sale of eggs to the state was fulfilled.

Compared to last year, the milk and meat procurements decreased in all of the rayons. Of 300 kolkhozes and sovkhozes, 100 failed to fulfill their tasks for livestock and poultry procurements and 92 farms failed to fulfill their plans for milk procurements. Of 20 kolkhozes and sovkhozes in Paydeskiy Rayon, for example, the plan for selling milk to the state was fulfilled only by the Yanedaskiy Sovkhoz-Technical School.

MEAT PROCUREMENTS AND AVERAGE DAILY WEIGHT INCREASES IN LIVESTOCK DURING FATTENING, FOR JANUARY-JUNE 1982

Rayons	Livestock and poultry procured at all categories of farms, in %		Average daily weight increase in livestock during fattening at kolkhozes and sovkhozes, in grams	
	of the plan for the 1st 6 months	of the same period for 1981	Large-horned cattle	Hogs
Pylvaskiy	117	86	566	439
Khar'yuskiy	112	87	430	387
Rakvereskiy	110	76	448	394
Vyruskiy	108	87	552	395
Khaapsaluskiy	105	75	470	350
Tartuskiy	102	83	453	362
Yygevaskiy	102	84	416	379
Vil'yandiskiy	97	84	512	476
Khiyumaaskiy	97	95	450	454
Pyarnuskiy	95	80	381	463
Raplaskiy	91	88	446	393
Kingiseppskiy	88	84	553	353
Valgaskiy	83	77	431	332
Paydeskiy	80	75	298	376
Kokhtla-Yarveskiy	73	75	499	367

This was all influenced by the feed shortage experienced last winter. Owing to extremely unfavorable weather conditions, the plan for the production of locally produced feed last year was fulfilled by only 62 percent. Many farms were obviously adversely affected by organizational problems. The party organizations of farms and the people's control groups must persistently require the elimination of all existing shortcomings.

In June, an average of only 356 kilograms of milk per cow was obtained throughout the republic. It has been several years now since we have observed such low milk yields; this figure is even 11 kilograms lower than that for last year. Nevertheless, compared to last year the milk yields in Khaapsaluskiy and Vyruskiy Rayons were 3-4 kilograms higher and Pylvaskiy and Pyarnuskiy Rayons succeeded in maintaining their milk yields at the level for last July. We possess all the prerequisites required for raising our July milk yields to last year's levels.

By 1 July the average milk yield throughout the republic was 1,849 kilograms per cow, or 215 kilogrmas lower than the indicator for the first six months of last year. The largest minus amounts were to be found in Raplaskiy (358), Paydeskiy (319) and Khiyumaaskiy (301) Rayons.

The largest milk yields per cow during the six month period were obtained by the livestock producers on farms in Rakvereskiy Rayon -- 1,782 kilograms. Also included among the best were the livestock producers on farms in Pyarnuskiy and Pylvaskiy Rayons.

MILK PROCUREMENTS AND COW PRODUCTIVITY DURING JANUARY-JUNE 1982

Rayons	Milk procured at all categories of farms, in % of		Average milk yield per cow at kolkhozes and sovkhozes, in kg.	± kilograms compared to same period for 1981
	Plan for 1st 6 months	Same period for 1981		
Rakvereskiy	117	86	1782	-208
Vyruskiy	107	87	1640	-184
Khar'yuskiy	102	79	1541	-268
Pyarnuskiy	99.1	91	1754	-113
Pylvaskiy	94	97	1727	-54
Tartuskiy	94	85	1561	-191
Vil'yandiskiy	92	84	1660	-298
Yygevaskiy	91	86	1689	-179
Kingiseppskiy	89	87	1563	-141
Valgaskiy	87	87	1448	-169
Khaapsaluskiy	85	83	1468	-180
Paydeskiy	83	80	1732	-319
Kokhtla-Yarveskiy	82	82	1567	-223
Khiyumaaskiy	82	81	1579	-301
Raplaskiy	77	74	1510	-358

Our relatively high productivity herd requires daily and thorough attention. But this condition is not being observed in a strict manner in all areas. This may explain the fact that many farms, even during June when there is an ample supply of grass feed, are unable to maintain their milk yields at the required level.

Several years ago Raplaskiy Rayon was considered to be one of the best in the republic in terms of milk production and yet at the present time it is listed as having fallen behind. Certainly, work is being carried out in the rayon and yet use is not being made of all of the available reserves. In addition, leading experience is being introduced into operational practice in a very slow manner. The result -- great differences among the farms in their production levels. This year the recommendation was made that grazing by sections be introduced into operations on an extensive scale for the dairy herd and yet this method is still not being employed properly in Raplaskiy Rayon.

During the first 6 months, the production and sale of meat to the state decreased mainly owing to the fact that a less than rich feed ration adversely affected the daily weight increases of the animals undergoing fattening. Compared to the first 6 months of last year when the daily weight increases for hogs amounted to 425 grams and for large-horned cattle -- 622 grams, this year the figures were 400 and 465 grams respectively. During the first 6 months of 1981 the average sales weight for large-horned cattle was 441 kilograms and this year -- 397 kilograms. Whereas last year the meat combines were supplied with hogs weighing 101 kilograms, this year -- 88 kilograms.

Nevertheless, there is one pleasing fact. These indicators improved somewhat during the month of June. Thus the daily weight increases for hogs undergoing fattening increased to 455 grams and those for large-horned cattle -- to 786 grams.

The average sales weight for large-horned cattle in June was 403 kilograms and that for hogs -- 98 kilograms.

In order to increase the production of meat and improve its supply to the population, the intensive fattening of livestock must be continued during the coming months and the daily weight increases raised. Opportunities for accomplishing this are available on each farm: there is adequate feed and the farms have been allocated additional quantities of concentrates.

The livestock producers have been assigned the task of increasing the number of cows to the maximum possible degree during the summer months, so as to make it possible to obtain more cheap milk. Many rayons have begun carrying out this task in a successful manner. Thus the number of cows is increasing at the present time on farms in Yygevaskiy, Pylvaskiy, Pyarnuskiy and Vil'yandiskiy Rayons. But at the same time the number of cows on farms in Khaapsaluskiy, Khiyumaaskiy, Kokhtla-Yarveskiy, Raplaskiy and some other rayons is decreasing. It obviously makes no sense to retain barren cows in a herd and yet summer is not the time to carry out extensive culling out work. An increase in the number of cows during the coming months represents one of the chief means for raising milk production.

The private plots also constitute an important reserve for increasing the production of meat and milk. During the first 6 months of this year the private sector sold more livestock to the state than it had sold by this same time last year. This year, 10,000 (9 percent) more young pigs were sold to the population than were sold to them 1 year ago and the number of chicks sold to the population also increased. In the future the farms will be under an obligation to furnish assistance to that portion of the population maintaining its own livestock.

In order to carry out the annual tasks for the production and procurement of meat and milk in the best manner possible, more effort must be expended during the second half of the year and considerably better quality work performed. The activities of all of the collectives and their party organizations must be directed towards achieving this goal. The ministries of agriculture and fruit and vegetable economy, rayon party committees, executive committees of SND's and the rayon agroindustrial associations must examine in a critical manner the operational results of each farm for the first 6 months and undertake measures aimed at eliminating the shortcomings observed. Importance is being attached this year to achieving noticeable results in implementing the decisions handed down during the May Plenum of the CC CPSU.

7026
CSO: 1824/466

REGIONAL DEVELOPMENT

CENTRAL ASIAN AGROINDUSTRIAL DEVELOPMENT

Regional Integration, Cooperation

Tashkent EKONOMIKA I ZHIZN' in Russian No 6, Jun 82 p 18-23

/Article by S. Yuldashev, academician and vice president of the All-Union Academy of Agricultural Sciences imeni V.I. Lenin: "Primary Obligation of Scientists in the Central Asian Region"/

> /Text/ "With regard to the specific indicators for the production of particular types of food goods, they should be viewed as being minimal in nature. All effort must be directed towards ensuring that they are not only fulfilled but even over-fulfilled. The USSR Council of Ministers and Gosplan must continue the work of intensifying and defining more specifically the program and carrying out further improvements in it. This will provide us with the firm knowledge that each year and with each billion rubles invested we are drawing closer to our goal and also how close."

In the all-union division of labor, agriculture in Uzbekistan, Tajikistan and Turkmenia is the principal supplier of raw cotton and certain other products which are not produced or almost not produced in other regions of the USSR. Occupying only 2.5 percent of the country's arable land, the Central Asian republics furnish 8 percent of the gross agricultural output of the USSR, including 85 percent of the raw cotton, 100 percent of the kenaf, 80 percent of the silkworm cocoons and more than two thirds of the karakul pelts.

During the years of the Tenth Five-Year Plan, 38.7 million tons of raw cotton, or 5.2 million more tons than during the Ninth Five-Year Plan, were produced in the republics of Central Asia. During this same period, grain production was increased by 7.2 million tons, potatoes -- by 275,000, vegetables -- by 5.5 million, fruit and berries -- by 690,000, grapes -- by 830,000 tons and eggs -- by 1.9 billion.

However the demand for high quality food products, which is becoming more intense as a result of rapid growth in the monetary income of the population and with the prices for the principal food goods remaining relatively stable, is exceeding the supply of such products. A shortage of livestock products is especailly noticeable in the republics in our region. The principal reason for this situation lies in the fact that the food element in the region's agroindustrial complex is insufficiently developed and is not responding to the tasks assigned during the 26th CPSU Congress. The development of the food branches is being adversely affected by the strained balance in irrigated lands and by imperfections in the production structure of the kolkhozes and sovkhozes; the presence of large land areas having a poor reclamation status and insufficient moisture; the slow development of cotton-alfalfa crop rotation plans; the unsatisfactory utilization of the advantages offered by specialization and concentration; the low productivity of livestock production and field crop husbandry branches.

In addition, growth in the production of goods by the food complex is being restrained by shortcomings in the organization of feed production, by the weak logistical base for procurements and for the storage, processing and sale of products, by the absence of an effective system of machines for the all-round mechanization of livestock production and the production of fruit and vegetable products and also owing to derelictions in the organization of labor, production and control.

As a result, in the republics of Central Asia the population's meat requirements, in accordance with scientifically sound food norms and based upon internal production, are being satisfied by only 34.9 percent, milk -- by 49, eggs -- by 52.6, potatoes -- by 51.2, fruit and grapes -- by 47.3 and vegetables and melon crops -- by 86.4 percent.

It would appear that the task consists of developing the food complex in every possible way and undertaking appropriate measures for this purpose. In the plans for the Eleventh Five-Year Plan, cotton production is stabilized at the level achieved during the last years of the Tenth Five-Year Plan, with the areas of irrigated land expanding at the same time. Exceptionally favorable conditions have been created in all areas for the mastering of cotton-alfalfa crop rotation plans, for strengthening the feed base and developing livestock production, vegetable raising, horticulture and viniculture.

Taking all of this into account and also the acute nature of the food problem in Central Asia, the planning and agricultural organs, when determining the prospects for development, must call for improvements in the production structure of agriculture, in the interest of achieving a substantial increase in the proportion contributed by the food branches to the gross agricultural product.

Colossal opportunities are available for accomplishing this. The amount of land that is suitable for irrigation is in the neighborhood of 50 million hectares. However, further intensive development of new lands in the region is today being restrained by a shortage of irrigation water. According to studies carried out by aquicultural planning organizations, if the modern rates for irrigation development are continued the water resources of the Syrdar'ya River Basin will be exhausted by the year 1985 and those of the Amudar'ya River Basin -- by 1990.

The solution consists of diverting a portion of the flow of Siberian rivers into Central Asia. In view of the fact that such a diversion will not only serve to intensify the production of food products for satisfying the requirements of the region's population but in addition it will make it possible to supply vegetables and melon crops, fruit, grapes and other products on a large scale to the central regions of the country, the Urals and to Siberia, scientific-research and planning work in this direction should be expanded. At the same time, the scientific-research institutes should develop and introduce an all-round program for the efficient and thrifty use of all local sources for irrigation -- a program which will ensure that maximum quantities of products will be obtained for each cubic meter of irrigation water used.

A most important task of the planning and agricultural organs and the scientific-research institutes is that of validating and developing the concepts and forecasts for development of the food agroindustrial complex for the next 15-20 years. This is a complicated task. It requires a more precise definition of the resources available for agricultural production, the distribution of branches by zones of the region and determining the output volumes for the principal final product from both a territorial and branch standpoint.

The first stage in this great work must be that of developing systems for the management of agriculture in conformity with the various natural-economic zones and oblasts of Central Asia. These systems must call for measures for raising the rates of development for the food branches, maximum intensification of agriculture based upon an acceleration in scientific-technical progress, increased specialization and concentration and also measures for solving the social problems of the rural areas.

The agroindustrial food program is a many-sided all-round system. The nucleus of the complex is agriculture. But the final results of a solution for the food problem are greatly dependent upon a number of other branches of the national economy, particularly upon the organization of transport operations and the storage and processing of products, upon efficient operations by the food, meat and dairy, milling-groats and other branches of industry, the fishing economy, trade and upon trade, procurement and other organizations, that is, upon a good balance among all elements of the food complex. Thus the scientific institutes, especially those which are carrying out economic studies, must expand and intensify their all-round studies of a particular problem, substantiate the capabilities and the plans for the distribution of enterprises engaged in the processing of agricultural products, the procurement netowrk, storehouses and freezers and determine the requirements for specialized transport operations.

In this regard, I would like to discuss in greater detail the problems concerned with the development of the leading branches of the agroindustrial food complex.

First of all, there is the grain. We presently have three principal directions for developing the grain economy: rice production on irrigated lands at specialized farms; corn (Central Asian sorgho) and other grain forage crops on irrigated lands in crop rotation plans with cotton and other crops; grain production on non-irrigated lands. Each of these directions will be retained and developed in the future.

Compared to 1965, the kolkhozes and sovkhozes of Central Asia increased their grain production by a factor of almost 4 during 1980. Such growth was achieved as a result of having expanded the sowings of grain on irrigated lands and also by raising the cropping power. A great role was played by specialized (especially grain-growing) sovkhozes, by an intra-farm concentration in the distribution of rice and corn sowings on crop rotation plan fields and by improving the quality of the agrotechnical methods employed in the cultivation of grain crops.

At the same time, by no means is full use being made of the opportunities available for increasing the production of bread and forage grain. In particular, a great amount of attention should be given to developing a special purpose program for increasing the production of corn and rice.

In corn production the industrial technology should be mastered in a more rapid manner, use should be made of seed for highly productive hybrids and varieties, fertilizers should be applied in a rational manner and improvements carried out in the agricultural practices employed. Rice production should be carried out in all areas using engineering rice systems, with mastering of the crop rotation plan being accelerated. In the zone of non-irrigation grain production, an increase is required in the use of mineral fertilizers and heribicides, seed production must be improved and a conversion must be made over to the sowing of grain crops using only the seed of regionalized varieties.

In the system of measures aimed at solving the food program, a very important role will be played by the production and year-round supply of the population with potatoes, vegetable and melon products, fruit and grapes. Towards this end, a great amount of work has been carried out in recent years in the republics of Central Asia aimed at increasing production specialization and concentration. The suburban specialized kolkhozes and sovkhozes that have been created are now producing almost 80 percent of the marketable fruit and vegetable products. Here the yields are 15-20 percent higher and the production costs 25-30 percent lower than at non-specialized farms.

The creation of special associations and thereafter ministries of the fruit and vegetable economy exerted a positive effect on the development of fruit and vegetable production. In the Uzbek SSR, for example, this ministry's sytem presently includes 193 specialized sovkhozes and 43 processing enterprises. The orchard and vineyard sovkhozes are linked to the wine-making industry and the vegetable growing sovkhozes -- to the canning industry. Fifteen sovkhoz-plants are in operation and a network of retail trade firms and a number of service enterprises and organizations have been created.

The operational experience of agroindustrial associations and sovkhoz-plants confirms the progressive nature of the integration of agriculture with the processing industry.

A planned increase in the production of fruit and vegetable products is being delayed by the fact that intra-farm specialization has still not been completed for the vegetable growing and vegetable dairy farms, no solution has as yet been found for the problem of converting the procurement system over to direct contacts and also owing to a lack of storehouses, special transport equipment and packaging materials.

In the Central Asian region, a general plan has still not been prepared for the development and distribution of large-scale vegetable hothouse combines, which in the near future would make it possible to supply the population with fresh vitamin products the year round. The scientists are not exerting sufficient effort aimed at ensuring that the vegetable growing kolkhozes and sovkhozes have at their disposal a system of machines for sharply reducing labor expenditures for the cultivation of vegetable crops.

Moreover, further intensification and increased vegetable production efficiency require more studies aimed at further improving the plant protection system, while taking into account the requirements for protecting the environment and the extensive introduction of biological and integrated systems for achieving a maximum reduction in crop losses and the retention of quality in the crops. An acceleration must also take place in the creation of highly productive varieties and hybrids for vegetable and melon crops and potatoes, that will be suitable for both mechanized harvesting and prolonged storage.

Large reserves for increasing the production of goods are to be found in horticulture and viniculture. In order to place them in operation, improvements must be carried out in the condition of the plantings, sparseness in the plantings must be eliminated, a campaign must be waged against crop losses caused by pests and diseases and the rates for the development of intensive horticulture must be accelerated.

The plant breeders are presently testing a number of domestic and foreign varieties of fruit, subtropical and nut crops. New and highly productive varieties of apples, pears, extra-early varieties of peaches, soft seed varieties of pomegranates, short height varieties of apricots and cherries must be developed and introduced into operations. The plant breeders must direct special efforts towards the creation of new varieties of fruit crops and grapes which will be suitable for mechanized harvesting, prolonged storage and transport operations.

Compared to cotton production and other branches, the level of mechanization of labor-consuming processes in horticulture and viniculture is very low. The machines and work implements being used are far from perfect. Thus the scientists must carry out rapid improvements in the zonal system of machines for the all-round mechanization of horticulture and viniculture.

The scientific institutes must furnish assistance to the kolkhozes, sovkhozes and agroindustrial associations in completing the varietal modernization of perennial plantings and the correct organization of the territory of orchard and vineyard tracts and in the organizational structure of the brigades and departments.

In the interest of expanding the areas of orchard and vineyard plantings, land development work must be continued and particularly in mountainous and piedmont zones and on pebble beds not being used for cotton. Every attempt must be made to ensure that in the future these same mountainous and piedmont zones will become the foundation for the raw material base for wine-making. This will make it possible to utilize more completely the resources of irrigated zones for the production of table grapes and currants.

More extensive use must be made of progressive methods for the pre-planting tilling of soil, rational irrigation regimes, fertilizer applications and highly effective methods for combating pests and diseases. This will make it possible, without additional capital investments, to increase the cropping power of fruit and grapes by a factor of 1.5-2 and raise it to 150-200 quintals per hectare.

In the future, specialized and highly intensive vegetable production, horticulture and viniculture will be developed based upon agroindustrial integration, which insures better utilization of labor resources and improved production efficiency. In the interest of accelerating the process of agroindustrial integration, the scientific institutes are obligated to develop and validate the parameters for sovkhoz-plants and agroindustrial associations being planned and measures for improving the cost accounting relationships aimed at creating equal economic opportunities for farms operating under different production conditions.

Under the regional conditions which prevail in the Central Asian zone, a central and more complicated element of the food complex is livestock production, which must supply the population with meat, milk and eggs.

Recently a great amount of work has been carried out here in connection with the accelerated development of livestock production, specialization and its conversion over to an industrial basis. A large number of livestock complexes and poultry factories have been built or modernized and the network of inter-farm enterprises for the fattening of livestock and the raising of replacement young stock has been expanded. Increases have taken place in the numbers of all types of livestock and poultry and their productivity raised.

During the Eleventh Five-Year Plan, work already commenced will be further intensified. Special attention will be given to developing the early maturing branches of livestock production -- poultry raising and hog farming -- and to increasing the production of goods on the private plots of citizens and also on the farms of consumer cooperation and industrial enterprises.

But many unresolved problems remain in livestock production. One such principal one is that of obtaining sufficient high quality feed by means of field feed production. In order to ensure that the rates of growth in feed production surpass the increases in number of animals, cotton-alfalfa crop rotation plans must be mastered in all areas and more complete use must be made of the opportunities for increasing the quantities of feed by means of combined, secondary and post-harvest sowings.

Experience teaches us that feed production must become an independent specialized branch of the national economy and a highly efficient one. This requires a substantial improvement in the branch's logistical base, an increase in fertilizer deliveries and a complex of sowing and harvesting machines, sprinkling units, specialized transport vehicles, capacities and equipment for the processing of feed and for preserving it.

In order to eliminate the deficit in protein-mineral substances in the feed for livestock and poultry, a plant for the production of mineralized feed should be created in the region and the construction in Uzbekistan of a biological combine for the production of stimulants made from cotton leaves and also an oil-extraction plant for the production of high protein petal oil-seed meal should be accelerated. In order to increase the amount of feed protein available, the production of animal feed through the utilization and biochemical and thermal treatment of karakul lamb carcasses deemed not suitable for use should ideally be organized. Feed preparation shops for the production of feed from the waste products of cotton production should be created on farms in the cotton zone.

Just as in the past, seed production continues to be a bottleneck in feed production. There is a shortage of seed for alfalfa, oats, barley, rape, peas and other forage crops. In order to solve this problem, more thought must be given to the problem of creating seed production farms and raising their material interest in increasing the production of high quality seed.

A chief reserve for increasing the production of livestock products is that of raising the productivity of the livestock and poultry. Today, according to estimates by scientists, owing to poor livestock feeding and maintenance and, it follows, low weight increases and milk yields, many farms are realizing only 60-65 percent of their potential for meat production and only 65-70 percent for milk production.

In the interest of increasing the productivity of the herd, in addition to improving substantially the feeding of the livestock, the degree of barrenness must be lowered and 90-95 calves must be obtained from every 100 cows, 25-27 young pigs from every sow and 120-150 lambs from every 100 ewes. Moreover, the milk yield of a forage cow must be raised to 3,500 kilograms of milk and the delivery weight of large-horned cattle increased to 400-500 kilograms, hogs -- to 110-120 and sheep -- to 45-50 kilograms.

In order to increase milk production, improvements must be carried out in zooveterinary work in the selection of highly productive strains and in the raising of good quality replacement heifers for planned strains. Ideally, specialized zonal breeding farms should be created in the region's oblasts for each principal regionalized strain of dairy cattle (black-variegated, shvitskaya, bushuyevskaya and red steppe).

The scientific institutes have developed a technology for the maintenance and fattening of beef cattle. Today, with the required principles having been created for the development of beef cattle husbandry, we must accelerate the organization of highly productive pedigree herds and, based upon strengthening the feed base, achieve a sharp increase in the production of meat.

Scientific and technical progress and the expansion taking place in inter-branch relationships are exerting a tremendous influence on the modern stage in the development of the agroindustrial food complex. This requires a more thorough study of the problems associated with implementing improvements in planning, the administrative structure and in the entire economic mechanism.

Special importance is being attached to improving the economic interrelationships among the branches and enterprises of the agroindustrial food complex. In particular, the practice of price formation for the products of its interdependent branches must be improved. The prices for agricultural products on the one hand and industrial products for the rural areas on the other are still not sufficiently sound or interrelated. On more than one occasion an increase in the procurement prices for the purpose of raising the production profitability for a particular agricultural product came to naught owing to a corresponding increase in the wholesale prices for the means of production (agricultural equipment, mineral fertilizers, toxic chemicals) and an increase in expenditures for payments for production services.

An important national economic task consists of improving the prices for products of the agroindustrial food complex and achieving more efficient use of them as a lever for further development of agricultural production. The scientist-economists must not lose sight of this important problem.

Recommendations must also be developed for introducing additional material incentive measures for issuing to branch workers of the complex based upon the results of their labor. These measures must achieve a unity of interests for the state, enterprises and the direct producers of the products.

In the decisions handed down during the 26th party congress and the November (1981) Plenum of the CC CPSU and in recent statements by Comrade L.I. Brezhnev during his attendance at celebrations in Tashkent, the task was assigned of radically improving the use of all national economic resources and mobilizing all reserves for further improving industrial, construction and agricultural production.

In this regard, the agrarian scientists should carry out intense studies aimed at uncovering the true reasons for the as yet insufficiently high profitability and in many instances the unjustifiably high production costs for milk, meat, vegetables and other food products.

Naturally, life and practical experience require that we not only uncover the causes of inefficient management but also point out the means for eliminating them.

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Implementing Tijik Food Program

Tashkent EKONOMIKA I ZHIZN' in Russian No 6, Jun 82 pp 23-27

/Article by A. Maksumov, deputy chairman of the Tajik SSR Council of Ministers and Corresponding Member of the All-Union Academy of Agricultural Sciences V.I. Lenin: "Radical Changes Are Required in the Branch Structure"/

/Text/ In the plan for the economic and social development of Tajikistan for the Eleventh Five-Year Plan, the task has been assigned for the very first time of expanding and strengthening the food agroindustrial complex, although today the branches engaged in producing food products are furnishing only one fifth of the gross agricultural output. A tense food program has been outlined for the purpose of satisfying more completely the increasing requirements of the population. In 1985, the following types and amounts of products must be produced: 190,000 tons of meat, 500,000 tons of milk, 475 million eggs. The plans call for the procurement of 280,000 tons of vegetables, 285,000 tons of fruit and grapes and large quantities of grain, potatoes and other products.

Agriculture as it has developed in Tajikistan, based upon the predominant development of cotton production, has been justified historically by the country's urgent and vital requirements. Today, in keeping with the all-union task of forming a powerful food complex for the country and with a republic food agroindustrial complex in the process of being formed, radical changes are required in the branch structure of agriculture in order to provide it with proper proportionality and greater balance with all spheres of private and production consumption.

Meanwhile, a situation has developed in recent years in agriculture throughout the republic, and one which is becoming more acute, wherein owing to limited (it might be more accurate to say -- the exhaustion of) land resources, the opportunities for increasing even the sowings of cotton have become more restricted.

At the same time, our republic has the highest rates for population growth in our country and this is bringing about a steady drop in the level of agricultural production per capita from a cost standpoint. By the end of the Eleventh Five-Year Plan, the population of Tajikistan will have increased by 16-17 percent and gross agricultural output -- by only 12-14 percent. And this will occur despite accelerated and rapid development of the branches of the food complex.

In such a case, do favorable prerequisites exist for carrying out the required structural improvements in agriculture? The answer is yes. The union planning organs have supported proposals aimed at solving complicated republic problems associated with a shortage of arable land and increasingly dense population levels. The possibility of bringing about considerable improvements in the food branches of agriculture, mainly based upon optimization of the sowing area structure of the cotton complex, is embodied in the plans for the forthcoming decade. The expected growth in cotton plantations, with moderate rates for increased cotton production, is making it possible to introduce crop rotation plans, thus intensifying both cotton and feed production. We must orient the farmers towards the unconditional production of not less than 12-15 tons of feed units per irrigated hectare.

The intensification of crop rotation feed fields represents a chief trend with regard to increasing the bulk and variety of feed being obtained within the cotton complex. Serious scientific-research and experimental work must be carried out in connection with raising the cropping power of alfalfa and growing corn for grain. In addition to conducting a thorough study of all problems concerned with the intensification of the republic's grain economy, including the organization of specialized corn growing sovkhozes, useful scientific recommendations and leading experience must also be introduced into operational practice.

In connection with the role played by livestock production within the framework of the agroindustrial complex, both the practical workers and scientists must understand clearly that this branch is an absolutely equal land user of the cotton and other branch agricultural complexes. It is in the interest of livestock production that a serious study of the structure of the sowing areas should be undertaken, with the required amount of irrigated arable land being allocated for organizing specialized feed production.

The development of the food portion of the cotton complex thus establishes the decisive role it plays in the production of meat and milk. This is supplemented to a considerable degree by the recently begun formation of a suburban vegetable-dairy farm and the accelerated development of zones for beef cattle husbandry.

The huge experimental agroindustrial Khovaling Association, created in the foothills region of Kulyabskaya Oblast, does not have an equal in international practice. Here, vast territories of summer grazing and winter pastures are being intensified, a fattening site for 20,000 head of cattle has been placed in operation and new methods have been introduced for industrial fattening. All of this is opening up great opportunities for increasing the production of cheap beef and it is revealing the means to be employed for the efficient development of other equally promising cattle raising zones in the republic.

In discussing sheep raising, it should be recognized that measures undertaken thus far have not produced the desired effect: the number of sheep is not increasing, the pasture economy is being managed in an unskilled manner and the quality indicators are extremely low. Here the problem is not so much technological shortcomings as it is incomplete organizational work. It is obvious that in order to overcome the inertia of obsolete forms of management, sheep raising today cannot be based solely upon such a natural resources as pasture, which does not have a responsible manager. The process which has just commenced, of concentrating sheep production on a rayon scale, should be viewed as the first step towards improving the administration of the branch.

In the near future we must complete the formation of a republic system for industrial fattening and a developed network of specialized enterprises for the raising of non-calving young cows and we must carry out a basic reorganization of the methods employed in sheep raising operations. In the future, the capabilities of the hog complexes and poultry factories must be increased and in a manner such that they will satisfy more completely the population's requirements for the products produced by these early-maturing branches of livestock production.

It goes without saying that the conversion of livestock production over to an industrial basis will be greatly dependent upon the efficient organization of modern feed production and feed preparation operations and upon the extensive use of the achievements of scientific-technical progress in this field.

In addition to the planned increase in return from a feed hectare and radical improvements in the operation of the mixed feed industry, greater importance is being attached to the microbiological processing of feed, for which there are adequate raw materials in the republic. The organization of the microbiological industry such that it will be capable of revolutionizing feed production based upon the use of local resources is an extremely complicated task. It requires strong research work and the creation of coordination centers for merging scientific and technical thought at the region level. The development of an all-union food program for completely satisfying the requirements of the country's population for food products raises the obligation, in the form of a basic principle, of achieving the mentioned goal for all regions without exception. This position should serve as the methodological base for determining the approaches to be used for forming regional food sub-complexes and at the same time it confronts the developers of special purpose programs with rather complicated problems, since they require a balance in the land, financial and materials resources which will satisfy the conditions for the harmonious development of both the technical and food branches of the agroindustrial complex. In the Tajik SSR, such a task must obviously be solved taking into account the possible importing of individual food products, the complete production of which cannot be ensured by suitable land resources.

With regard to those products the importing of which is impossible or their production should ideally be organized locally, the complete requirements for them should certainly be taken into account in the regional food complex. Based upon this fact, substantial corrections should be introduced into our past scientific pre-planning preparations. In particular, today, distinct from the past, we are confronted by the task of completely satisfying the republic's requirements for vegetables and potatoes through internal production by 1990.

Recently the annual value of agricultural products produced in the Tajik SSR reached roughly 1.5 billion rubles. During the next 2-3 five-year periods, it should be raised substantially. In this regard, a requirement exists for searching for basically new approaches for solving the problem. They consist mainly of utilizing the great opportunities embodied in the powerful development of horticulture and viniculture, for which there are large potential land resources. Moreover, Tajikistan has favorable natural-climatic conditions at its disposal for the production of high quality products. The mentioned considerations served as the basis for defining horticulture and viniculture as the second branch of all-union agricultural specialization in Tajikistan, and this is reflected in important directive documents.

With regard to the scale of the branch's resources, it can be said that they exceed to a considerable degree the republic's present fund of irrigated land and in terms of the possibility of production intensification they now exceed those of the existing farming branches. True, the development of these resources involves extremely complicated work and will require 2-3 decades. However, the true potential will increase by 2-3 times the present gross output volume of agriculture, it will multiply the republic's contribution to the all-union production fund and advance this trend as a general strategy for the future development of agriculture in Tajikistan.

Today we must commence the formation of the principal horticultural-viniculture zones on a modern industrial basis, with full use being made of the experience accumulated in the management of highly efficient non-irrigation viniculture and intensive irrigated horticulture in the foothills and mountain regions.

Citrus fruit growing must occupy a special place in the horticultural-viniculture complex, since the rich experience accumulated in the republic in growing lemons in unheated trenches provides the basis for raising this branch to the level of republic specialization.

The intensive formation and extensive development of horticulture and viniculture can be successful only upon the condition of complete understanding not only of the long-range special purpose tasks but also of the methods for achieving them. Similar to other branches of the republic's food complex, this would require a thoroughly developed and scientifically sound plan for the development and distribution of specialized enterprises, a plan which must become a specific program of action.

Thus, in the republic's food complex that is in the process of being formed, it is possible to single out a group of branches which satisfy the local requirements (livestock production, vegetable production and potato production) and branches of republic agricultural specialization, the products of which in the future, in addition to cotton production, will be delivered to the all-union fund on a large scale.

During the November (1981) Plenum of the CC CPSU, Comrade L.I. Brezhnev stated that the all-round food program "must bring together the effort being expended in agriculture proper, in its service branches of industry and in the systems for procuring, storing, processing, transporting and trading in agricultural products."

The party demands that the food complex be developed in a manner such that it becomes possible to close off all avenues for losses in food products. Success in carrying out this work will depend to a decisive degree to the amount of thought and attention given in the various areas to the structure of the entire agro-industrial complex and upon how skilfully existing disproportions are eliminated, the capacities of storehouses and freezers are increased and bottlenecks in the processing industry, in transport, packaging and trade are overcome.

A great amount of work remains to be carried out in this regard and, in particular, better means must be found for bringing together in a single organizational-administrative unit the activities of a number of ministries and departments. As yet we still lack conformity in the level and scales of development of agriculture, which constitutes the core of the complex, with the processing of the products obtained there or with industry which supplies it with the necessary means of production. The republic still lacks warehouses and storehouses, specialized transport vehicles and hard surface roads.

In addition to large measures of an organizational nature, serious corrections must be introduced into the planning and distribution of resources, including capital investments, among the various spheres of the complex. While assigning a priority to the production of food products, we must not overlook such an important problem as that of preserving that which has already been produced. And this requires storehouses and particularly the construction of storehouses in the areas where the products are produced. The organization of storage directly in the area of the producer, as experience has shown, provides many advantages, especially under those conditions found in the republic where transport difficulties are aggravated by complicated mountainous relief terrain.

The capabilities of specialized transport should be increased at accelerated rates, container shipments should be expanded and enterprises should be built for the production of different types of packaging materials, the shortage of which in recent years has been holding back production operations considerably. The time is at hand for examining freight motor transport operations and regulating it.

The problems concerned with the development and distribution of industry in connection with the primary processing of agricultural raw materials should undergo special examination. Its present distribution is not in keeping with the long-range requirements. The formation in the republic of a food complex requires a suitable distribution throughout the territory and the construction of new dairy plants and meat combines, wine-making plants and enterprises for the processing of juices, dry fruits and other food products.

An equally important role must be played by trade, which is required to supply the population with good quality food products on a continuous basis. It must be economically interested in reducing the amount of time required to move the products from the producer to the consumer. However, direct agricultural contacts should be organized not only with trade but also with the processing industry directly, since the timely utilization of unsold products and the waste-free management of agricultural production are dependent upon such contacts being strengthened.

The private plots of kolkhoz members, sovkhoz workers and office workers must become an object of special study and support. The contribution made by privat plots towards satisfying the personal requirements of workers for food products and in deliveries of surplus products to the kolkhoz markets is quite considerable. In view of the fact that in Tajikistan one half of the large-horned cattle and one third of the small-horned cattle belong to the population, it is obvious that the development of the private plots and the increased production on them of meat and milk, fruit and vegetable products, melon crops, fruit and grapes must be promoted in the future.

Under the conditions found in our republic, extreme importance is attached to protecting the land resources from all forms of squandering. We must necessarily be alarmed by the fact that during the 1970-1981 period the withdrawal of land for non-agricultural purposes reached almost 42,000 hectares of agricultural land. The great withdrawals of such land and the steady growth in the population have brought about a reduction in the per capita amount of agricultural land. Compared to 1970 when the figure was 1.45 hectares, in 1980 -- only 1.1 hectares per capita.

The recently adopted Land Code regulates land utilization to a considerable degree. However the compensation employed in no way covers the losses in such priceless wealth as the irrigated lands in the southern region of the country. The system for withdrawing valuable lands for non-agricultural purposes must be eliminated. Here the agrarian science must exert some influence.

The present stage in the scientific-technical revolution and the new requirements imposed upon agricultural production are raising substantially the role played by science on the whole in the solving of practical tasks. A leading role in this important work is quite properly being played by the Central Asian Branch of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/, the organizational and coordinating role of which is constantly being intensified at the republic level.

One of the most important anticipated results of the joint activities of scientists must be that of developing a clear prospect of what can be expected in the future and what methods can be employed for achieving scientifically sound goals in the development of agricultural production on the whole and that for each of its branches, especially the branches of the food complex.

As rapidly as possible, we must convert over to the specific simulation of the different variants for current and long-range development of the agricultural branches and to more effective territorial organization of agriculture, which will create more favorable conditions for the introduction of industrial technologies. The implementation of such a specific task is impossible in the absence of close contact and joint work among the representatives of the various sciences, specialists who are capable of including in their works all of the more important production and social aspects concerned with the formation of the agroindustrial food complex. This will undoubtedly require a reevaluation of much which in the past appeared to us to be proper or at least acceptable.

[illegible] associated with the problems of the agroindustrial food complex of the [illegible] SSR can be solved successfully only if they are coordinated closely with the regional tasks for agroindustrial development in the entire Central Asian [illegible] region and the prospects for forming a powerful food complex for the country. A comprehensive discussion of these problems in the economic journal must serve as the basis for considerable and efficiently coordinated joint research and practical work.

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Turkmen Plans, Requirements

Tashkent EKONOMIKA I ZHIZN' in Russian No 6, Jun 82 pp 27-31

/Article by K. Sakhatmuradov, deputy chairman of Gosplan for the Turkmen SSR: "Taking Into Account the Republic's Specific Conditions"/

/Text/ In Turkmenistan, just as throughout the country as a whole, the food program is being developed with a high sense of responsibility for the preparation of measures which can be implemented in a rapid manner. This work is being carried out by the republic's Gosplan in close contact with the scientific-research organizations and with all interested ministries and departments and also with the participation of the local soviets. The task consists of skilfully combining a sharp increase in the production of food products with the specialization that has been in existence over a period of many years at a majority of the republic's kolkhozes and sovkhozes, mainly in cotton production and karakul sheep raising.

True, during the Tenth Five-Year Plan we also displayed concern for improving the branches engaged in producing food goods. The extensive development of irrigation and the equipping of agriculture with highly productive equipment have made it possible to develop considerable areas of virgin land, raise the cropping power of crops and increase the production of all types of agricultural products. Moreover, it is to be noted that during the past five-year period the sowing area for cotton increased by only 4 percent, whereas the area for vegetable crops -- by 27, potatoes -- by 65, orchards -- by more than 22, vineyards -- by 50 and forage crops -- by 32 percent.

As a result, the average annual production of grain increased by a factor of 1.7, vegetable and melon crops -- by 40 percent and potatoes -- by 27 percent. The production of fruit and grapes increased considerably. Substantial changes also took place in livestock production. A strengthened feed base made it possible to increase the number of public livestock and the productivity of the animals. As a result, meat production increased by 17 percent, milk by 31 and eggs by 46 percent.

In assessing the republic's successes in agriculture, I take pleasure in noting that they were achieved owing to friendly assistance received from other fraternal republics -- Uzbekistan, Tajikistan and Azerbaijan, with whom we have competed over a period of many years. The exchanging of delegations, direct participation in one another's affairs, a sense of comradeship and collective responsibility and mutual enrichment with leading experience are making it possible to obtain rich agricultural crop yields and highly productive livestock operations. In addition, mutual relationships and indestructible friendships between our people are being strengthened.

Despite the noticeable quantitative growth in internally produced food goods and in food products being allocated to our republic from the all-union fund, the population's demand for many products is still not being satisfied fully by any means. On the one hand, this is explained by the rapid growth in the size of the population and in its purchasing power and, on the other, by the shortage of irrigated land for expanding the production of food products and feed for livestock production. The great losses which take place in products already grown cannot be overlooked. It is known, for example, that during the years of the Tenth Five-Year in the republic an average of up to 20 percent of the vegetables and melon crops and up to 15 percent of the feed were lost. The quality of certain types of agricultural crops deteriorated as a result of failure to observe the established technology for cultivating them and also because of violations of the storage conditions.

Recently we carried out a number of measures aimed at eliminating all types of losses in food products. Nevertheless, large quantities of grain are being used for purposes other than those originally intended and at times it is even being discarded as waste. The same can be said regarding other types of agricultural products. In many cities in our republic, the collection of food scraps for feeding to livestock has still not been organized. It is apparent that more educational work must be carried out and a sense of thrift instilled in the people with regard to their use of grain, meat, milk, vegetables, fruit -- all types of food products.

As is well known, agriculture is the foundation for the food program. Thus the chief task consists of developing agriculture in every possible way and linking it more closely to the industrial branches for storage, processing and sales. In other words, a single agroindustrial food complex must be created which will produce, process and supply the population with food products. Although we are concerning ourselves for the very first time with the development of such a multi-plan food program, nevertheless the importance of achieving a balance among the branches entering the food complex is already clear at the present time. It is in this matter that the planning and economic organs require constant and skilled assistance from the scientists.

Further improvements in all branches of the agroindustrial complex and a strengthening of its logistical base are called for in the Basic Directions for the Economic and Social Development of the Turkmen SSR During the 1981-1985 Period and for the Period Up To 1990. Moreover, emphasis is being placed upon sharply increasing the production of those types of agricultural products, the shortages of which cause disruptions in supplying the population with food goods.

Owing to the extremely limited water resources, the best support for the republic in terms of food goods can be achieved only when the production of raw cotton is maintained in the future at the 1985 level, that is, at the volume of 1.25 million tons. If this condition is met, it will be possible to increase grain production twofold compared to the 1980 level, early potatoes -- by threefold, vegetable and melon crops -- by 1.9 times, fruit -- by 3.9 times, grapes -- by more than 4 times, meat -- by 38 percent, milk -- by 36 percent and eggs -- by 1.5 times.

Thus in the near future only the population's requirements for vegetables and melon crops will be satisfied completely and in the more remote future -- the requirements for fruit and grapes. Owing to the republic's specific climatic conditions, it is unable to satisfy fully its potato requirements by means of internal production. Thus potatoes must be imported from other regions of the country during the autumn and winter periods.

One of the chief tasks to be carried out when developing the food program is that of determining the methods for gradually improving the supply of livestock products to the population. During the past decade, extensive work was carried out throughout the republic in connection with increasing the production of livestock products and measures were implemented for achieving production specialization and concentration in livestock operations. However, a restraining factor has been and continues to be the weakness of the feed base, the expansion and strenghtening of which require more irrigation water than is available.

Thus the productivity of our livestock production operations is low. The average annual milk yield per forage cow is approximately 2,200 kilograms. The egg production of hens is still low. The raising and fattening of livestock have not been organized in a satisfactory manner and feed consumption per unit of product is high.

In connection with the food program, we are devoting a considerable amount of attention to those problems concerned with raising the productivity of the livestock and poultry. For example, by 1990 the proportion of cows in the herd is to be increased to 41 percent and the milk yield per cow increased by 25 percent. We are planning to modernize existing poultry factories and to build new ones. This will make it possible to increase the production of eggs and poultry meat. In the interest of increasing the resources of meat and other livestock products, measures are being undertaken aimed at further developing camel and horse breeding.

The increase in vegetable and melon crops and in livestock products will be achieved mainly at kolkhozes and sovkhozes. At the same time, it is expected that the private plots of workers and the subsidiary farms of industrial enterprises and organizations will make a fine contribution, as called for in the appropriate decrees of the party and government.

Such farms will be developed on an intensive basis, with assistance being furnished by the economic, planning, supply, construction and other organizations. Of basic importance is the fact that the relationships of the kolkhozes and sovkhozes with agricultural workers, with regard to the operation of private plots, are also presently established on a contractual basis. In conformity with this, the sale of all types of young livestock and poultry, seed, mineral fertilizers, equipment and construction materials to the population has been organized in the republic, irrigated land is being allocated and the local production or importing of orchard and gardening implements is being organized. Each year, up to 40,000 tons of concentrated feed, a portion of the above-plan output of cotton pods and milling waste products are sold to the private plots and agronomic and zooveterinary assistance provided to them.

In our republic the successful solving of the food program is inseparably associated with the increased use of new irrigated lands for agricultural purposes. The increase of 213,000 hectares of irrigated land planned for the current decade will be used almost entirely for development of the food complex.

During the current five-year plan, work will be completed on the Karakum Canal imeni V.I. Lenin as called for in the plan. This will make it possible, along the entire length of the canal, to ensure normal irrigation for the developed lands. The advancement of the canal into the southwestern regions of the republic will make it possible to increase the production of agricultural products considerably and to bring the products closer to the consumer.

The construction of the Tashauz Canal, for supplying water directly from the [illegible] Tuyamuyunskiy Reservoir, must be completed for the most part in [illegible]. At the present time, the water there is insufficient for maintaining the [illegible] level of production of agricultural products. The construction of the canal will make it possible in the future to expand the sowing areas by twofold and to transfer the production of medium-fibre cotton to this area from the southern regions, thus allowing the cotton growing farms in the southern regions to specialize completely in the production of valuable fine-fibred varieties. In addition, we plan to organize in the southern regions the large-scale commodity production of grapes of mainly table and currant varieties and also to expand the production of vegetables and melon crops.

Owing to the Tashauz Canal, considerable increases will take place in the future throughout the oblast not only in the production of cotton but also in the production of fruit, vegetables, high quality melons, sesame, alfalfa seed, meat, and milk and water will be supplied to new and highly productive pastures where it will be possible to maintain three times more karakul sheep than at the present time.

In the system of measures for solving the food problem, special importance is attached to expanding and strengthening the logistical base for agriculture. Within the current five-year plan, the republic must be supplied with almost 40 percent more tractors than it received during the Tenth Five-Year Plan, 50 percent more trucks and excavators, 60 percent more bulldozers and 45 percent more [illegible].

Naturally, the planned growth in agricultural production requires a considerable increase in the deliveries of mineral fertilizer to the republic. According to our [illegible], during the 1981-1985 period 1.6 million tons in a conversion for pure nutrient will be required, compared to 1.23 million tons as called for in the plan. In the future, the mineral fertilizer requirements will increase even more.

In connection with implementation of the food program, extreme importance is being attached to those problems concerned with improving the organization of labor and [illegible] labor employed for the production of agricultural products, raising the [illegible] of use of irrigated lands, irrigation water, production capital and the material, financial and labor resources of the kolkhozes and sovkhozes, intensifying and strengthening cost accounting and raising the profitability of agricultural production.

In all of these matters, the scientific-research institutes of the republics of [illegible] must furnish assistance to the planning and administrative organizations. Up until recently the coating of cotton seed for the purpose of [illegible] economies during sowing work had not been organized in our republic. As a result, thousands of tons of seed were planted in the soil annually from which it would have been possible to obtain large quantities of cotton oil, fodder cake and other products. In the process, the farms had to expend a considerable amount of [illegible] thinning out the seedlings. The scientists and practical workers should [illegible] this particular problem in a more rapid manner.

In [illegible] the important role played by agriculture in solving the tasks of the food program, it should be borne in mind however that all is not dependent upon agriculture alone. During shipment to the consumers, the products produced in agriculture lose to a large degree their beneficial qualities and properties and [illegible], because such important elements as the transporting of the products, the production of packaging materials suitable for the shipping of fruit, vegetables and melon crops, the storing and processing of products and trade, both organizationally and technologically, have not been properly developed.

The republic presently has at its disposal storehouses for potatoes, vegetables and fruit with an overall capacity of 67,000 tons, with machine cooling available for only 27,000 tons of this storage capacity. According to existing norms, these capacities satisfy only 36 percent of the requirements. As a result, it is not possible to create the required supplies of potatoes, vegetables and fruit. And this leads to prolonged delays in making them available to the population, it results in product losses and it restrains growth in agricultural production. The republic's climatic conditions create a raised requirement for storage capacities for the storing of meat, oil and fish products and the available capacities are again not satisfying the requirements. This is why we must first of all improve the entire system of storage for agricultural products. It is obviously more convenient and advantageous to store a definite portion of these products, for a definite period of time, at the kolkhozes and sovkhozes themselves. This will aid in eliminating excessively frequent supply operations and it will raise the quality of the products, reduce product losses, lower the workload of centralized storehouses and achieve more uniform utilization of transport equipment and manpower. Hence the extensive construction of kolkhoz and sovkhoz warehouses and storehouses constitutes an important reserve not only for reducing losses in agricultural products but also for achieving more uniform deliveries of products to the trade network and to the processing enterprises.

In order to reduce losses in fruit and vegetable products and potatoes, a great amount of work must also be carried out in connection with improving production-economic relationships between the kolkhozes and sovkhozes on the one hand and the procurement and trade organizations and processing enterprises on the other and direct contacts between them must be established to the maximum possible degree. Of great importance in protecting the products, their marketable appearance and quality are those problems concerned with supplying the farms with packaging and wrapping materials, specialized transport equipment and suitable loading and unloading equipment.

There is one exceptionally weak link in the chain of movement of vegetable products from the fields to the counters -- transport operations. Specialized transport equipment is required for the continuous supplying of potatoes, vegetables and fruit to the cities and during both the cold and warm periods of the year -- refrigerated transport. Specialized packaging materials are also required. Product losses increase when there is a shortage of such materials or when transport or loading operations are poorly organized. In short, the scientists must provide help here on an urgent basis if solutions are to be found for all of these problems.

In developing the food program, the republic's party organization, the soviets of people's deputies, the planning organs, scientists and the scientists attached to ministries, departments, kolkhozes and sovkhozes proceeded upon the assumption that sudden growth in agricultural production would bring about sharp improvements in the supply of products for the republic's population, in conformity with the rational norms for nutrition and increase the deliveries of such products to the all-union fund.

However, the implementation of this program requires proportional and balanced development for all branches of the agroindustrial complex, efficient interaction among them and the combined efforts of all workers in agriculture proper and in its service branches of industry.

In connection with the all-union division of labor, the republic will in the future retain its cotton specialization and especially in the production of fine-fibred varieties consisting mainly of 1st grade quality fibre. At the same time, it will also retain its specialization in the production and sale to the state of karakul pelts and other sheep raising products to the state. This is the result not only of the profitability associtated with these mentioned branches of agriculture but also of the specific natural-climatic conditions involved.

Our country is preparing to celebrate in a festive manner its great jubilee -- the 60th anniversary of the formation of the USSR. The workers of Turkmenistan, having launched a socialist competition to worthily prepare for this glorious jubilee, are doing everything possible to implement the historic decisions handed down during the 26th CPSU Congress and to make a notable contribution towards implementation of the country's food program.

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Uzbek Agroindustrial Dynamics

Tashkent EKONOMIKA I ZHIZN' in Russian No 6, Jan 82 pp 31-35

[Article by [illegible] Samoylov, Candidate of Economic Sciences and deputy chief of the Department of Scientific Organization of Labor and Controlled Programs of the Scientific Center of Gosplan for the Uzbek SSR: "An Efficient Economic Mechanism for the Agroindustrial Complex"]

[illegible] according to data supplied by the United Nations Organization, our country [illegible] the highest level of consumption of food products. By the end of the 1970's, [illegible] per capita food consumption in the USSR was 100 calories more than that [illegible] developed European countries.

[illegible] the Party is steadily and consistently pursuing a course aimed at [illegible] improving the welfare of Soviet people and achieving more complete [illegible] of their requirements for diverse types of food products. A special food program has been developed which has been defined as being of a priority [illegible] for solving the tasks of national economic development and extensive and [illegible] measures are being undertaken to ensure its successful implementation.

[illegible] Uzbekistan [illegible] devoted a great amount of attention to the development [illegible] complex. In this process, the Scientific-Research Economic Institute [illegible] carried out work aimed at defining the [illegible] of the food complex and its place and role in the national economy [illegible] the republic's agroindustrial complex.

[illegible] the importance of the food complex in the national economy of Uzbekistan has increased noticeably. This has become apparent [illegible] gross output production has increased [illegible]. During the Tenth Five-Year [illegible] example, the proportion of gross output production for the food complex [illegible] more than [illegible] percent and now amounts to almost [illegible] percent and the average annual value of its fixed productive capital increased noticeably. A large portion of the republic's industrial-production personnel work within the sphere of the food complex. All branches of the food complex associated with the production and processing of products are developing at rapid rates. During the past five-year plan, agriculture accounted for 37.5 percent of the complex, the procurement organizations -- 33.7 and the food industry -- almost 29 percent.

Beyond any doubt, these are all gratifying facts. However, if we approach the problem from the standpoint of more complete satisfaction of the population's requirements for food products, then the food complex is still not operating sufficiently effectively and its structure and developmental trends are marked by a number of negative phenomena and disproportions. This can be seen using such an important indicator as the rates of growth for gross output production. It would appear, based upon this indicator, that the republic achieved laudable results during the Tenth Five-Year Plan -- 36.2 percent. But analysis reveals that the high rates were achieved mainly owing to large increases in the production of vegetables and melons, with either negligible increases or even reductions being observed in the production of other products and also in consumption.

The above represents the overall trend. However, it bears mentioning that as a result of great efforts undertaken by the Central Committee of the Communist Party of Uzbekistan and the government of the republic, noticeable improvements were noted in the per capita consumption of livestock products commencing with the second half of the Tenth Five-Year Plan.

The imbalance in the development of the food complex was caused mainly by the fact that the large capital investments in its development were not always utilized in an efficient manner. In a number of branches of the complex, the rates of growth in fixed productive capital exceeded to a considerable degree the rates of growth for the production of goods. This was particularly typical of the food industry, where during the Tenth Five-Year Plan fixed capital increased by 79.3 percent and gross output production -- by only 28 percent.

An analysis of the dynamics of the inter-branch proportions reveals some negative trends in the food complex. It is becoming more agrarian in nature. And this is in conflict with the existing trends for agroindustrial integration. Structural improvements in the national agroindustrial complexes of CEMA member countries, including other republics of our country, commencing with the mid-1960's, have revealed a constant reduction in the proportion of agricultural production and an increase in the proportion of branches engaged in producting the means of production and furnishing services to agriculture and also in those branches associated with the procurement, processing, storage and sale of agricultural raw materials and food products.

Thus, for example, for the country as a whole during the Tenth Five-Year Plan, the proportion of agriculture in the production of goods within the agroindustrial complex decreased by seven percentage points. A somewhat different situation developed in Uzbekistan: the proportion of agriculture in the production of goods in the complex increased by 0.43 percentage points, caused by a reduction in the proportion of the food industry by 2.7 percentage points and also in the proportion of machine building and [illegible].

Without any doubt, such a situation is quite properly viewed as being negative in nature only when the republic's food complex is viewed as a closed system, without taking into account agricultural production specialization in the country's national economy and also without taking into account an active inter-republic exchange. But even here one draws the conclusion that branches engaged in producing the means of production for the food complex are not developing at a sufficiently intensive rate in Uzbekistan.

Thus the proportion of machine building in the fixed productive capital of the food complex amounts to only 3 percent and reflects a tendency to decrease. Thus the complex will be greatly dependent upon equipment being received from other regions of the country and this aggravates the difficulties associated with supplying its branches with machines and equipment. For example, the republic is receiving from outside its borders all of its specialized transport vehicles, equipment for modern storehouses for agricultural products, freezers, many types of agricultural equipment and practically all of the equipment required for the food industry. Moreover, the equipment being delivered to Uzbekistan from other regions of the country is not always designed taking into account our specific natural-climatic conditions.

In addition to the above, permit me to cite the following typical example. According to data supplied by the USSR Ministry of the Meat and Dairy Industry, enterprises of the dairy industry of Uzbekistan, owing to a lack of equipment, are receiving only 0.4 percent of their milk in a cooled state, whereas the average indicator for the country is 43 percent and in Estonia it exceeds 94 percent. Naturally, owing to the republic's warm climate, raised losses in milk products result. Similar situations are being observed in a number of other branches of the food complex.

An unsatisfactory situation prevails in the republic's food industry, some [illegible] operations of which are lagging behind in their development and are unable to meet the increasing requirements of the population for many goods. Even the urban population, which is better supplied with products of the food complex than is the rural population, occupies one of the last places in the country as a whole.

In particular, it should be noted that the republic's food industry is producing an extremely limited variety of goods and for all practical purposes does not [illegible] improving the marketable qualities of products intended for consumption in fresh form, it is not producing natural canned goods or quick-frozen products and it is producing very little children's or dietetic foods. Yet there is great potential here for doing so. Dozens of types of valuable food products can be obtained from corn and potatoes alone. But an expansion of the assortment requires the introduction of new technologies and appropriate equipment [illegible] already mentioned, the logistical base for the republic's food [illegible] is weak.

[illegible] tion in the republic's food industry, [illegible], are nevertheless still higher for such goods as [illegible] meat products and also in the case of some other products [illegible] ensure a reduction in the difference in consumption compared to [illegible] indicators. All of this poses a serious problem with regard to optimizing development of the branches of the food industry of Uzbekistan, taking into account the possibilities of similar products being delivered from other republics of the country.

This particular evaluation of the food complex is rather traditional from the standpoint of existing approaches for analyzing the proportions of the branches, revealing disproportions in the national economy and large inter-branch complexes and based upon the branch system for planning and administration. But for the food complex, which is certainly special purpose in nature, it is unacceptable in view of the fact that it is extremely complicated to coordinate proportionality in the development of the branches with the final goals of the complex, which includes achieving rational nutritional norms for the population.

In our opinion, when planning the development of this complex, one must first of all establish proportionality between its principal sub-complexes, which correspond to the nomenclature of the products developed by the Institute of Nutrition of the USSR Academy of Medical Sciences and to the physiological norms for nutrition. As a result, sub-complexes are singled out for the production of grain products, meat, milk, vegetables, fruit and so forth.

When such an approach is employed, the disproportions in the development of the sub-complexes are established more accurately and in a rather sound manner. Certainly, in the absence of norms it is clear that we consume more than enough grain products while at the same time the population suffers a shortage of meat products. But for planning the food complex, the development of which involves large capital investments, importance is attached to not only knowing which sub-complex to develop earlier but also the rates for developing it. It is precisely during this stage that a determination is made regarding the strategy to be employed for developing the food complex.

When planning the sub-complexes, the totality of the branches, each of which is aimed at satisfying definite food requirements of the population, must function as a harmonious structure within the framework of a single technological process. Naturally, this is possible when allocating capital investments on the whole for a sub-complex and in a distribution which will ensure coordinated development of its branches and the achievement of the established goals for the period planned. We possess just such experience in planning, particularly in the Ministry of the Fruit and Vegetable Economy of the Uzbek SSR, which combines agricultural production, the industrial processing of raw materials and trade.

However, is it correct to assume that optimization and a more rational structure for the branches have been achieved through the creation of such a combined structure as the Ministry of the Fruit and Vegetable Economy? Still another question arises -- does such a combined economic formation satisfy only the population's requirements for fruit and vegetables? It is obvious that similar structures can and must be created for the production, processing and sale of other types of products of the food complex. Indeed the trends in the development of the national economy are indeed moving in this direction

Naturally, however, such serious changes in planning and administration must be based upon thorough scientific undertakings. It is obvious that studies must be launched now aimed at determining the structure of the food complex and its sub-complexes, since each of them must specialized in the production of a definite group of products. Moreover, plans should immediately be prepared for development of the sub-complexes and also systems for controlling them, with consideration being given to the fact that the economic mechanism for the various sub-complexes, owing to their specific nature, will differ substantially. There will be one general requirement -- to interest all branches belonging to a sub-complex in achieving the established goals in the most effective manner. This will conform completely to the program-special purpose approach for solving the food problem.

As is known, the central task of national economic planning is that of establishing optimum inter-branch proportions. The same holds true for inter-branch complexes, including the food complex. The establishment of the best proportional development for its branches in the future will ensure a truly effective development for it. An overall criterion for effectiveness in this instance could be the shortest period for achieving rational per capita consumption norms for the food products.

The developers of the food program are aware that its initial form points out the goal for development of the food complex -- rational norms which are furnished to the republic on a directive basis by USSR Gosplan for a planned period. These norms are of special importance since they represent the only means by which it is possible to establish objectively the existing proportions between the principal sub-complexes.

During the course of carrying out work on the food complex norms, they underwent critical evaluation at NIEI /Scientific Research Institute of Economics/, the point of view of medical specialists was obtained and the weak scientific validity of these norms for Uzbekistan was established.

But indeed the norms are required not only for developing the food program. Both earlier and at the present time, they have been and are of value in carrying out planning work, particularly for validating the delivery volumes for food products being received by us, within the framework of inter-republic exchange, from other republics of the country. And it is surprising to note that the norms used for determining the degree of satisfaction of the population's requirements are least well formed within the republic itself.

The reason for this lies mainly in the fact that many economists are convinced that the requirements of the human organism for food goods are stable. This is true for a particular category of people. But the physiological and rational norms for nutrition -- this is the requirement for the average individual in the [illegible] and it is dependent upon the population structure, the character of work being performed, habits, climate, that is, upon factors which are not constant and [illegible] in different regions of the country. The norm must be corrected taking these factors into consideration. Realistically, they can be developed only in the various republics, particularly in Uzbekistan, by a collective of scientists from the Tashkent [illegible] Institute, assisted by scientists from other scientific-research institutes [illegible] the republic.

In view of the fact that the food program as developed encompasses an extended period of time, further computations for the future must be based upon a scientifically [illegible] normative base. In the opinion of the specialists, a minimum of 3 years is required for the development of rational nutritional norms. We have at our disposal both the base and the skilled specialists required for accomplishing this.

Another important problem associated with development of the food program is that of proper detailing for individual regions of the republic's territory. At the present time, long-range plans are being composed for the economic and social development of the oblasts of Uzbekistan. A substantial shortcoming with regard to such plans could be the absence of studies on national economic programs. It would obviously be justified, by analogy with development of the food program, which is a separate but component part of the overall plan for the economic and social development of the republic, to also single out this (food) program in the plans for developing the oblasts.

This is a rather complicated task. It requires, for example, a thorough study of the level of consumption achieved for food products, a clarification of the rational norms, the details for the importing and exporting of food products, that is, those problems the solving of which involve considerably more complications at the oblast level than they do for the republic as a whole. Nevertheless, a solution is required for this problem.

Moreover, the difficulties of a methodological nature must be borne in mind. The existing methods and instructions for developing the plans for the economic and social development of a territory do not call for a program portion and thus they must be revised. Since during the second half of this year a draft overall plan for the economic and social development of Bukharskaya Oblast will be developed in the republic center for scientific organization of labor and production control, it is considered advisable for this plan to call for the development of a food program. The experience thus accumulated can be used in the future for forming food programs for other oblasts of the republic.

A need has developed for carrying out studies aimed at improving control in the agroindustrial complex at the rayon, oblast and republic levels, for the purpose of ensuring the coordination and proportional development for all of its principal subunits and for strengthening the economic mechanism of the food complex. This was mentioned in the recommendations of the scientific-production conference on the problems concerned with development of the food agroindustrial complex of Central Asia, which was held in February of last year in the city of Dushanbe.

During the conference, the experience of the Latvian SSR was cited as an example. Here, in all areas, rayon agroindustrial associations were created which logically completed an extended experiment aimed at searching for a form of control which would coordinate agricultural production in a rayon with the enterprises and organizations servicing it and processing the output of kolkhozes and sovkhozes. Their organizational unity in a territory is reinforced by the mutually coordinated interests of the enterprises and organizations, wherein each collective, regardless of its departmental subordination, is interested in the success being achieved by all participants and the association as a whole.

The experience of the fraternal republic reveals that the merits of branch control and planning are being combined successfully there with the requirements for territorial development. However, it should be noted that this experience is typical of a republic having a rayon administrative division. Thus its use here in Uzbekistan must be carefully thought out.

The country still lacks experience in administering the agroindustrial complex of a republic, experience which is based upon an efficient economic mechanism. In

Moldavia, for example, which accumulated considerable experience in agroindustrial integration at a low level, a rather definite opinion has also formed regarding the need for improving the system of control over a complex at the republic level. As yet, the departments and associations in this republic, which are oriented towards the production of goods based upon agricultural raw materials, are characterized by a scattered structure for planned control and by the absence of operational management by them, based upon a single approach for the development of all branches of the complex. This disrupts the integrity of the technological, economic and social relationships within the framework of the complex and it lowers the effectiveness of the capital investments in its development. This same situation is typical of Uzbekistan.

Meanwhile the requirement for clear knowledge of the means and methods for implementing the food program, based upon an efficient system of control and management, is exceptionally great. Here there should be a recommendation, in the form of a special purpose task (at the republic's Gosplan level) to create a collective of scientists and production workers, who within a short interval of time but not with undue haste (2-3 months), would study the experience accumulated in the various areas and union republics and thereafter, taking into account the specifics of Uzbekistan and its positive experience, present the directive organs with recommendations for controlling and improving the economic mechanism in the republic's agroindustrial complex.

The implementation of such recommendations can and must serve as the organizational and economic foundation for carrying out the republic's food program, which is a part of the many-sided agroindustrial complex of Uzbekistan.

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Scientists Offer Suggestions, Opinions

Tashkent EKONOMIKA I ZHIZN' in Russian No 6, Jun 82 pp 36-38

/Article by I. Larin, Candidate of Economic Sciences and department head at SANIIESKh, R. Vergazova, Candidate of Economic Sciences at SANIIESKh, R. Rakhimov, director of the Institute of Economics of the Academy of Sciences of the Tajik SSR and [illegible] Ismal'khanov, Corresponding Member of VASKhNIL and director of the Uzbek Scientific Research Institute of Livestock Production: "Problems Awaiting Solutions"/

/Text/ Under modern conditions, the production of food products from agricultural raw materials cannot be developed on an autonomous basis. It transcends the bounds of agriculture. Many factors which determine its development are formed in other branches engaged in carrying out procurement, storage, industrial processing, servicing, marketing and other functions. Thus, success in the operation of an individual kolkhoz, sovkhoz or even a branch is greatly dependent upon the contribution made by the labor collectives of the entire agroindustrial complex. Under these conditions, unified control is required over all of its elements, with control based upon the territorial principle.

It is precisely this principle that is being employed at the present time for the organization of APO's /agropromyshlennoye ob"yedineniye; agroindustrial association/. In our republic we have the APO imeni Lenin in Papskiy Rayon and the Kommunizm APO in Sariasiyskiy Rayon. One very important problem is being solved successfully in the administration of these associations -- the combining of the interests of the association with the interests of local (territorial) organs of government.

Taking into account the advantages offered by the territorial principle of control, we now have inter-rayon agroindustrial associations for the production of processing of fruit, vegetables and grapes which have been transformed into oblast facilities. There are now 13 such facilities attached to the Ministry of the Fruit and Vegetable Economy for the Uzbek SSR.

However, it would be incorrect to assume that the organization of associations has served to complete the work of achieving unity of purpose and interests among the branches and production efforts of the agroindustrial complex. This problem cannot be automatically solved of and by itself. With the organization of territorial associations, only the prerequisites are created for overcoming departmental [illegible] and, it follows, for ensuring proportional development of the component parts of the food agroindustrial complex. The task consists of making skilful use of these prerequisites.

[illegible]. Larin
Candidate of Economic Sciences and department
head at SANIIESKh

At the present time, the enterprises and organizations included in the structure of an agroindustrial association retain the rights of a legal entity and economic independence.

Cost accounting isolation of enterprises lowers their interest in improving the economic indicators of an association and restricts the role played by the latter in mobilizing resources and utilizing economic levers and stimuli for raising production efficiency.

In order to raise production efficiency at agroindustrial associations and create the conditions required for the complete realization of the potential opportunities afforded by an organizational-economic union of agricultural and industrial production, solutions must be found for a number of problems associated with improving the economic mechanism at the associations themselves.

A central place in this mechanism is occupied by an economic agreement, which legally strengthens the equality of the sides and their mutual property responsibility for non-observance of the contractual obligations. Such an agreement serves as an effective economic-legal [illegible]

However, for this instrument to become truly effective, improvements must be carried out in the system of penalties for non-observance of the contractual obligations, such that the amount of the penalty is sufficient to cover the loss caused by the side which violated the agreement. In addition, a system of measures is required for issuing material incentives for the timely and high quality delivery of raw materials and products, for which purpose centralized funds for economic stimulation should be created.

In order to improve the production activity of an agroindustrial association, the [illegible] functions of cost accounting control over the enterprises should be centralized within the association's system. It must become a legal entity with a regulated fund and a current account in Gosbank, all problems concerned with production planning and the sale of finished products must be solved and composite accounting and reporting carried out.

Under conditions of complete cost accounting, the interrelationships of associations and sovkhoz-plants with the state budget during the distribution of profits are carried out in two directions: in the form of payments from profits for fixed productive capital of an agricultural or industrial nature and in the form of stable installment payments into the budget. Within the framework of one farm (sovkhoz-plant), in which the production processes are closely intertwined, it is very difficult to clearly separate the fixed capital by branches. However the existing system, in accordance with which the payment for the funds is differentiated depending upon their purpose, requires such a separation.

A need arises in this regard for implementing proposals aimed at establishing in the agroindustrial enterprises a single weighted average percent of payment into the funds, with no breakdown for them into fixed productive capital of an industrial or agricultural nature; and for sovkhoz-plants having high rent income and profits from industrial activity (especially through the processing of outside raw materials) -- differentiated stable payments into the budget in percentages of the computed profit.

R. Vergazova
Candidate of Economic Sciences at SANIIESKh

In order to raise the operational efficiency of the agroindustrial complex, great importance is attached to the condition and development of its infrastructure -- transport, various storehouses and warehouses and the packaging economy. Computations indicate that the branches of the infrastructure account for more than 11 percent of the overall output volume of the agroindustrial complex of Tajikistan, which is considerably lower than that required for the formation of an optimum structure for the complex.

leading place in the infrastructure must be occupied by the transport system, where the losses in agricultural products are especially great and, it follows, great reserves are available for increasing its volumes. New roads must be built, a large number of new motor vehicles acquired, specialized transport operations created and much other work carried out. The financial resources of the kolkhozes and sovkhozes are completely inadequate for these purposes. Hence, additional sources for financing capital investments must be found.

An important component part of the infrastructure of the agroindustrial complex is represented by storehouses, the capacities of which must be increased and the network of warehouses equipped with refrigeration units. The storing of vegetables and fruit at an optimum temperature is making it possible to reduce losses by a factor of 5-7.

At the present time, a large portion of the products does not reach the consumer owing to a shortage of packaging materials -- cardboard-paper, glass and wooden. Within the agroindustrial complex, the production of packaging materials must be established as an independent cost accounting subunit.

R. Rakhimov
Director of the Institute of Economics of the
Academy of Sciences of the Tajik SSR

Livestock production occupies an especially eminent place in the food program. Its successful development requires that solutions be found for a number of complicated problems.

Let us take dairy cattle husbandry. In Uzbekistan, 174 dairy complexes have already been placed in operation and tens of thousands of cows are being maintained at these facilities. By the end of the Eleventh Five-Year Plan, their number will have increased by threefold.

The branch is increasing at an intensive rate and its effectiveness is becoming more and more obvious. During the Tenth Five-Year Plan, the milk yield per forage cow, for the republic as a whole, was raised by 558 kilograms. Labor expenditures and feed consumption per unit of output decreased and the quality of the milk improved.

Certainly, all of this is the result of laborious scientific work and great effort on the part of the livestock breeders. A rather large herd (hundreds of thousands of head) has been created in the republic of the more productive, under local conditions, black-variegated cattle. From this large group of animals, the animal breeders of our institute singled out two new plant lines which are better suited than other lines for the local natural-climatic conditions and which provide milk yields of from 5,000-7,000 kilograms of milk per cow, with a fat content in excess of 4 percent. It is obvious that these cows must be bred following their approval by the State Approval Committee of the USSR Ministry of Agriculture.

One very important factor for efficient work by dairy complexes is the creation of their own feed base. Over the past few years, new varieties of forage crops have been created at the institute for various purposes and for different zones of the republic -- corn, grain and feed sorghum having a high sugar content in the fodder, oats, barley and semi-sugar fodder beets.

If we summarize preliminary results, then it can be stated that the number of dairy cattle has increased, the feed base for livestock production has been strengthened and new complexes have been built. Nevertheless, we are still not satisfied with the dairy productivity of our cows. The chief reasons -- weak organization of breeding work and the artificial insemination of animals, low yield of calves and an insufficient number of cows in the herd.

But in our opinion there is still another equally important reason. Historically, the Central Asian region has never had specialized local dairy strains of large-horned cattle. All of the strains, with the exception of the recently created Bushuyevskaya strain, are imported from other natural-climatic zones of the country and from abroad. And their adaptation to the local climate is a rather prolonged and complicated process.

Naturally, it is possible to accelerate this adaptation and yet this requires the creation of an economic and efficient system for heat regulation for the microclimate in the livestock facilities and outside them. Meanwhile the dairy complexes, of which dozens are presently being built in the Central Asian republics, are for all practical purposes also "imported." The same designs and the same materials are being employed for erecting them in the Baltic region, in the Ukraine and in Siberia. It is obvious that all of the plans must be examined and standardized for such a vast and unique region of the country as Central Asia.

The problem of the mechanization of operations at livestock complexes is being solved in a very weak manner. As yet there still are no Central Asian farms which have cheap and efficient systems for ventilation and air conditioning. And there is a strong requirement for them. The equipment available at the present time at the livestock complexes cannot endure the temperature or other parameters.

The construction in the warm climate regions of cow barns of the arched type with natural ventilation is deserving of attention. Such experimental buildings having double level roofs have proven their worth on our farms.

The question of questions -- output quality, in this instance milk. Our Krasnyy Vodopad complex was designed with a complete production cycle, that is, a small dairy plant is located at the end of the technological chain. We are of the opinion that such a system is required for complexes in suburban zones in Central Asia. It eliminated numerous transshipments of the products, which lead to product contamination and spoilage of the milk owing to the heat. Moreover, the complete cycle represents and additional source of income for the livestock production enterprises, another means for raising their productivity.

And finally, if we are discussing an overall approach for solving the livestock problems, then the time is obviously at hand for raising the question of creating a special planning and design-technological bureau or other center in the region (perhaps under the aegis of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/). On the one hand, such a center could coordinate the activities of the developers of the various departments and, on the other, it could summarize and accumulate all new, leading and promising developments and issue prepared recommendations for the planning tasks for livestock production operations.

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GENERAL AGRICULTURAL DEVELOPMENT PROBLEMS OF RSFSR REVIEWED

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[Article by C. Kulik, chief of the main planning and economics administration of the RSFSR Ministry of Agriculture: "Being a Thrifty Master on the Land"]

[Text] Speaking at the November (1981) Plenum of the CPSU Central Committee, Leonid Il'ich Brezhnev discussed the measures that were to provide for fulfillment of the taut plan for 1982 and the five-year plan as a whole, and he again emphasized the significance of the strictest policy of economy and the struggle against mismanagement and extravagance. To economize in large and small ways and to utilize intelligently the production potential, each ruble of funds allotted by the state and each hectare of land--such is the most important task of all the kolkhozes and sovkhozes of Russia.

To be a thrifty master means to utilize land efficiently and to be concerned about increasing its fertility and multiplying the force of the hectare. Today all the necessary conditions have been created in the republic so that the managers and specialists of the farms, relying on recommendations from science, can locally determine what to plant on one section of land or another, when to begin the work, and how many and what kind of livestock to keep. Of course, these questions are not simple and when solving them one should not forget about the main thing--fulfilling commitments to the state. It is also necessary to think about opening the doors to the fields more widely for those crops which produce the greatest output of products under the conditions of a particular farm or rayon.

Managers and specialists are acting correctly on those farms which are changing over to a scientifically substantiated system of farming, simultaneously expanding the fallow land when this is necessary. Fallow land which the grain growers have forgotten to cultivate and fertilize promptly can hardly bring them any advantage. Last year, for example, Volgogradskaya Oblast plowed only 40 percent of the land at the best agrotechnical time periods, Chelyabinskaya--13 percent, Kurganskaya--30 percent and the Bashkir ASSR--56 percent. When allotting plowed land for fallow the farms counted on obtaining a good return, but with this kind of cultivation there is no reason to hope for this. "Neglected" fallow entails losses of products as well as gross and net income.

Properly concerned about increasing the fertility of the land, kolkhozes and sovkhozes of Leningrad Oblast annually apply 19-20 tons of organic fertilizers per hectare of plowed land, Moscow--13-14, the Karelian ASSR--14-15, the Komi ASSR--16-17 and Krasnodarskiy Kray--6-7 tons. Yet in Novgorodskaya and Pskovskaya oblasts each hectare receives only 8 tons, Kaluzhskaya--4.3, Ryazanskaya--3.3, Novosibirskaya--1.4, Irkutskaya--1.2, and Volgogradskaya--1.2 tons of manure. Calculations show that when applying a ton of organic fertilizer the farms spend 3-3.5 rubles, but the earnings from the additional products amount to 7.8 rubles. There are possibilities of increasing the doses of organic fertilizers on literally every kolkhoz and sovkhoz.

It will be necessary to utilize mineral fertilizers more productively as well. It is known that they lose their power if they are applied to acid soils. There is an especially large amount of soil like this in the nonchernozem zone, where almost half of all the fertilizers allotted for the republic are sent. Unless the soil is de-acidified these fertilizers do not produce the necessary additional yield.

A thrifty and economical attitude toward the land is unthinkable without productive utilization of irrigated land. The kolkhozes and sovkhozes of Russia now have a great deal of reclaimed land at their disposal. Capitally repaired, irrigated and drained land produce 14 percent of the farming products; all the rice, two-thirds of the vegetables, one-third of the corn grain and 25 percent of the feeds are raised on them. Unfortunately, on many kolkhozes and sovkhozes the irrigated hectare works at half strength. Yet they have many reserves. For example, during the years of the past five-year plan Moscow Oblast obtained 48 percent of its feed units from irrigated land, while Orlovskaya obtained only 19 percent and Tul'skaya --28 percent. In the Volga region the farms of Penzenskaya Oblast and the Tatar ASSR harvested 40 and more quintals of feed units per hectare, while Ul'yanovskaya Oblast harvested only 24.4 quintals and the Bashkir ASSR--27.4. A simple calculation shows that if the productivity of the irrigated land were increased on just the backward kolkhozes and sovkhozes of the Volga region to the average indicators for this zone it would be possible to obtain tens of thousands of additional tons of products.

The kolkhozes and sovkhozes sustain appreciable losses because of the fact that they do not observe the principal of the equality of planted and harvested areas. Many farms write off large areas of grain crops, corn and sugar beets and utilize them, as it were, for other than their intended purposes. Last year, for example, Rostovskaya Oblast failed to harvest the grain from many areas planted in corn even though they were planted for grain. In Belgorodskaya Oblast more than half the areas planted in corn were intended for grain. And the expenditures on the cultivation of a hectare of corn amount to more than 240 rubles. It is not difficult to calculate the losses this entails.

To work efficiently with the land means to select crops and strains skillfully, to observe the technology and time periods for conducting the work, and to increase the production of products from each hectare. Last year, for example, the yield of green mass from corn that was planted for silage amounted to 222 quintals on the farms of Moscow Oblast and 195 quintals on the Bryanskaya Oblast, while Ivanovskaya Oblast received only 75 and Ryazanskaya--70 quintals per hectare. In 1981 Tambovskaya Oblast obtained 95 quintals of green corn mass per hectare while

Belgorodskaya and Voronezhskaya oblasts obtained 200. It would hardly be a mistake to say that the producti·ity of each hectare is determined primarilv by the attitude of the farms and the local agricultural agencies toward their work.

It is known highly effective and economical it is to apply the soil protection system of farming in regions where there is erosion. In addition to an increased yield and increased fertility of the soil, this method of cultivation makes it possible to reduce the expenditure of fuel and other materials by 20-25 percent. But progressive technology is being applied far from everywhere. Saratovskaya and Volgogradskaya oblasts have approximately equal sections of eroded land--1.8 million hectares each. But while the farms of the former oblast conduct subsoil tilling on an area of 1.5 million hectares, those of the latter do this on only 848,000 hectares. In Omskaya Oblast the soil protection system has been introduced on 1.2 million hectares, while in Krasnoyarskiy Kray it is applied on only 221,000 hectares, even though more than 2 million hectares in the kray have suffered erosion. These examples show that the farms have no small reserves for increasing the production of products.

There is little to be gained from producing large yields if the farmers are not able to preserve what has been harvested and reduce losses to a minimum. An especially large amount has been done in recent years to solve this problem successfully. Today the kolkhozes and sovkhozes have good graneries, which satisfy 80 percent of the needs of the farms. There has been marked improvement in the capacities for storing vegetables, potatoes and fruits. By the end of the five-year plan the creation of a material and technical base for reliable storage of seeds, concentrates, potatoes, vegetables and fruits will have been basically completed.

The situation is not so good with respect to the preservation of feeds. The farms' expenditures on the procurement of a ton of silage amount to 19 rubles while losses from storing it in clamps and unlined trenches, according to the data of scientists, exceed 25 percent. For this reason the nonproductive expenditures of the kolkhozes and sovkhozes annually exceed millions of rubles and the state fails to obtain hundreds of thousands of tons of meat and milk. Good feed storehouses not only reduce losses of feeds, but also reduce expenditures on their transportation and preparation for distribution. Therefore the experienced farmer uses the funds at his disposal primarily for the construction of feed production facilities, of course.

In 1981 34 percent of the funds allotted for production construction were used for the construction of crop growing and feed production facilities in the RSFSR. But in Novgorodskaya Oblast they used only 26 percent of the funds for these purposes, Chelvabinskaya--22 percent, and Khabarovskiy Kray--26 percent of the funds allotted for construction.

The experience of the leading farms convinces us that good results can be achieved as a result of efficient utilization of the material and technical potential that has already been created, a thrifty attitude toward technical equipment, and economical expenditure of fuels and lubricants, repair materials and other materials. Large amounts of money are being allotted for the development of agriculture today and it is important to utilize them efficiently and intelligently and to increase production volumes in a planned way. During the past 15 years the capital availability for the kolkhozes and sovkhozes have increased four-fold. The gross output from agriculture in the public sector increased 1.6-fold during the years of the Tenth Five-Year Plan. But many kolkhozes and sovkhozes utilized their production potential poorly, the return from fixed capital remains low, and the volumes of production of grain, potatoes, vegetables and animal husbandry products are increasing slowly.

In 1966-1980 2.1 billion rubles were allotted for the development of farms of Pskovskaya Oblast and the farms' funds increased 4.5-fold. This indicator surpasses the average for the republic. Yet the gross output of products under the Tenth Five-Year Plan increased by only 30 percent as compared to the Seventh, and it even decreased as compared to the Ninth.

In 1966-1980 Kurskaya Oblast was allotted 2.5 billion rubles--approximately as much as Belgorodskaya. But the increase in the gross output of products in Kurskaya Oblast under the Tenth Five-Year Plan as compared to 1961-1965 was only 36 percent while in Belgorodskaya Oblast it was 50 percent.

In 1980 the fixed capital of the farms of Irkutskaya Oblast per 100 hectares of agricultural land amounted to 53,000 rubles and had increased 5.3-fold as compared to 1965. These are the highest rates of increase in the Eastern Siberian region. But the gross output increased here by 50 percent under the Tenth Five-Year Plan as compared to the Seventh. For comparison I should say that in Omskaya Oblast it increased by 70 percent during this period and Tomskaya--by 73 percent.

Up to this point a number of kolkhozes and sovkhozes are utilizing animal husbandry premises poorly, especially dairy complexes. And although these enterprises are operating efficiently in Leningrad, Moscow, Sakhalinskaya and Kamchatskaya oblasts, at many of them the productivity of the cows is less than 2,000 kilograms of milk. This is precisely the situation in Bryanskaya, Orlovskaya, Smolenskaya, Kirovskaya and Chitinskaya oblasts, and the Mary and Buryat ASSR's.

According to data of specialists, as a result of improving the operation of animal husbandry complexes alone it would be possible to obtain 500,000-600,000 additional tons of milk and 250,000-300,000 additional tons of meat while simultaneously increasing the profitability of production and the return from fixed capital.

Prematurely writing off technical equipment causes appreciable damage to the economy of the farms. During the years of the Tenth Five-Year Plan the kolkhozes and sovkhozes of Novgorodskaya Oblast wrote off 59 percent of the tractors, Kalininskaya--54 percent, Belgorodskaya--57 percent, Lipetskaya--58 percent and the Checheno-Ingushskaya ASSR--60 percent. During this period more than 50 percent of the trucks were written off on the farms of Vologodskaya, Smolenskaya, Tambovskaya and Penzenskaya oblasts, and 65 percent of the grain harvesting combines were written off on the farms of Vladimirskaya, Belrogodskaya, Lipetskaya, Ul'yanovskaya and Novosibirskaya oblasts. This situation is explained primarily by the fact that the kolkhozes and sovkhozes do not have enough standard shops, technical service points, sheds or areas for storing technical equipment. It is intended to spend approximately 3 billion rubles on their construction in the next few years. By the beginning of 1986 more than 80 percent of the kolkhozes and sovkhozes will have their own repair shops, petroleum bases and technical service points.

As we know, the kolkhozes and sovkhozes have now become large consumers of coal and petroleum products. Economical and thrifty utilization of fuel will not only make it possible to considerably reduce outlays for production, but also to save valuable energy resources. It is no accident that even now many farms are concerned about constructing modern petroleum warehouses and petroleum storehouses, are keeping strict count of fuel, and are providing incentives for machine operators and drivers to save on fuel and lubricants. In recent years there has also been a certain reduction in the expenditure of diesel fuel per conventional standard hectare. While in 1979 the tractors used 8.4 kilograms of diesel fuel for mechanized work per hectare, in 1981 this figure was 7.9 kilograms. The proportional expenditure of diesel fuel per ton/kilometer for shipping cargo decreased by 10 percent. Gasoline expenditures for automotive shipments also decreased.

Unfortunately, a thrifty attitude toward material resources has not become the norm everywhere. For example, Ivanovskaya and Vladimirskaya oblasts are neighbors. But while Ivanovskaya Oblast expended 6.5 kilograms of diesel fuel per conventional standard hectare last year, Vladimirskaya used more than 7 kilograms. In Tul'skaya Oblast, where the contours of the fields and the conditions for the utilization of technical equipment are better than in Kalininskaya and Smolenskaya oblasts, the expenditures of diesel fuel per one standard hectare were 8.5 kilograms in 1981--much more than on the farms of the two neighboring oblasts. If the kolkhozes and sovkhozes of the Volga region would reduce the expenditure of diesel fuel per conventional hectare to the average indicators for the economic region, this would make it possible to save more than 400,000 tons of diesel fuel and reduce the farms' expenditures by 35-40 million rubles.

A reduction of the expenditure of diesel fuel per hectare of work that is done by only 5 percent is tantamount to a savings of 572,000 tons of valuable fuel and a reduction of expenditures on its acquisition per farm of 4,000-5,000 rubles.

Last year the kolkhozes and sovkhozes spent 6.3 billion rubles on maintenance and operation of the machine and tractor fleet. Today a working day on a tractor costs the farms 33 rubles. More than 27 percent of the overall expenditures on the production of farm products goes for expenditures related to the operation of machines and tractors. Therefore one can understand the desire of the leading farms to do the entire volume of work with a smaller amount of technical equipment, to utilize it efficiently and to reduce to a minimum idle time and losses of working time.

The average daily output per tractor has increased in recent years. In 1978 it amounted to 6.6 hectares per standard tractor, and in 1981 it had increased to 7 hectares. But this is not the situation everywhere. The average daily output per tractor remains low on the kolkhozes and sovkhozes of Kalininskaya, Kaluzhskaya, Lipetskaya, and Chitinskaya oblasts and the Tuvinskaya ASSR. The utilization of combines also leaves something to be desired.

Organization, norm setting and payment for labor are becoming more and more important in solving problems related to highly productive utilization of technical equipment. Experience shows that machines and tractors are utilized better in mechanized detachments and teams that have changed over to the system of payment for entire jobs based on the final results of production. The situation is being rectified on those farms that are creating planting, feed procurement and harvesting while observing all recommendations.

The following calculations show how important it is to be concerned about productive utilization of technical equipment: an increased daily output of only 5 percent is tantamount to an additional 26,000 K-700 tractors being allotted to the kolkhozes and sovkhozes.

The farms also sustain losses from idle time of the machine and tractor fleet. Last year the idle time of tractors on the kolkhozes and sovkhozes reached 22 percent of the overall amount of time worked. Unproductive losses for these reasons exceeded 550 million rubles. Most of the idle time was caused by factors that were not so much technical as organizational and, consequently, the blame lies primarily with the managers and specialists of the farms.

Now about the private subsidiary farm, which the party and government intend to develop. In recent years, as a result of measures that have been taken, the amount of livestock owned privately by the population has increased somewhat. Today the rural resident of Russia produces on his own farm an average of 54 kilograms of meat, 305 kilograms of milk and 257 eggs. This is considerably more than was produced in 1965. But the possibilities of rapidly increasing the production of farming and animal husbandry products on private subsidiary farms belonging to the population are being poorly utilized in many places.

While in Smolenskaya and Tul'skaya oblasts the rural resident produces on his private subsidiary farm an average of 90-95 kilograms of meat in live weight, in Vladirmirskaya Oblast he produces only 33 kilograms and in Yarovlavskaya--48 kilograms. In Kurskaya Oblast meat production per rural resident amounts to 65 kilograms, in Kurganskaya--29, and in Orenburgskaya--44 kilograms. In many oblasts, krays and autonomous republics, the kolkhozes and sovkhozes sell 40-50 head of young hogs per 100 rural residents, in Ryanzanskaya they sell only 10, Novosibirskaya Oblast--9 and Krasnoyarskiy Kray--8. Bryanskaya, Rostovskaya and Kaliningradskaya oblasts do a good job of enlisting rural population to participate in the production of meat and milk. In Bryanskaya Oblast, for example, the farms conclude agreements with the kolkhoz and sovkhoz workers, provide them with part of their feed, allot them pasture lands, help them to procure and ship hay, and supply them with juicy feeds and silage. In turn, the kolkhoz and sovkhoz workers feed and sell for the fulfillment of the plan of the kolkhozes and sovkhozes young hogs, large horned cattle, milk and other products. This is advantageous to the farms, the state and the population.

Personnel remain a key issue in increasing the efficiency of agricultural production. All our success depends on their experience and efficiency, their skills and conscientiousness. An analysis of the operation of the farms shows that the main reason for arrears lie in the shortage of permanent machine operators and animal husbandry workers, their turnover and the poor assignment of specialists. In Ivanovskaya, Kalininskaya, Smolenskaya, Gor'kovskaya and Kirovskaya oblasts and the Udmurt ASSR some of the farms do not have permanent workers. During the periods of busy field work many machine operators are enlisted from industrial enterprises to the farms of the Volga, the Ural, the Western Siberian and Eastern Siberian regions. Under these conditions it is difficult to count on good results. Therefore those farm managers are asking correctly who devote the most constant attention to questions of social restructuring of rural areas, and the construction of residential buildings, roads, children's preschool institutions, schools, hospitals and clubs.

These are precisely the measures that help, finally, to form stable labor collectives.

In the RSFSR Ministry of Agriculture as a whole under the current five-year plan it is intended to spend 13.3 billion rubles on housing construction on the kolkhozes and sovkhozes. All of the planned increased in capital investments is to go for social restructuring of rural areas. The volume of housing and cultural-domestic construction is to be increased by 69 percent. A good example is provided by the farms of Leningrad Oblast. Last year they put 26 apartments per sovkhoz into operation here; in Moscow Oblast--24 apartments, Omskaya--24, Chelyabinskaya--22, and Murmanskaya, Ivanovskaya, Permskaya, Sverdlovskaya and Sakhalinskaya oblasts--15 apartments each. The sovkhozes of Lipetskaya Oblast doubled the introduction of housing. Last year they put into operation residential buildings with an overall area of 104,000 square meters. At the same time the kolkhozes of Kaluzhskaya in 1981 put into operation only 5 apartments per farm, and Ryanzanskaya, Tambovskaya and Chitinskaya oblasts--7 each. Not enough public housing is being constructed on the farms of the nonchernozem zone and the central chernozem region.

The party is setting forth the task of efficiently utilizing land and material and technical resources that are allotted for the development of agriculture. By carrying out this task the workers of the Russian villages will be able to strengthen the economy of the kolkhozes and sovkhozes and increase their earning ability.

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URGENT PROBLEMS OF AGRICULTURE IN CENTRAL ASIAN REGION DISCUSSED

Dushanbe SEL'SKOYE KHOZYAYSTVO TADZHIKISTANA in Russian No 4, Apr 82, pp 18-25

[Article by A. Khodzhibayev: "Crucial Problems of Agriculture in Central Asian Region"]

[Text] On the initiative of Central Asian branch of VASKhNIL and the ministries of agriculture of Uzbek, Turkmen and Tajik SSR's, at the beginning of February of this year in Dushanbe there was a scientific production conference on problems of the food agro-industrial complex of the Central Asian economic region.

M. S. Babayev, secretary of the Central Committee of the Communist Party of Tajikistan, opened the conference with a short introduction.

He said that the significance of this authoritative conference is determined by the fact that it is devoted not only to republic, but also interregional problems in the formation of a developed food agro-industrial complex--the most crucial tasks of the party's modern agrarian policy which were set by the 26th CPSU Congress.

Drawing up the food program, according to Leonid Il'ich Brezhnev is an extremely creative matter and, frankly, a complicated one. All Soviet people are vitally interested in its development and the broad scientific community as well as representatives of planning and state agencies are participating actively in it.

This conference met precisely to discuss in a business-like way and substantiate ways of intensifying agricultural production and ensuring the effective functioning of all parts of the agro-industrial complex of Central Asia.

We understand well the words of Leonid Il'ich Brezhnev at the November (1981) Plenum of the CPSU Central Committee: "There is no more important or noble cause than satisfaction of the vital needs of the people." Therefore we are convinced that this conference will serve for closer cooperation of the scientific forces of Central Asian republics in order to carry out better the region's common national economic tasks in the formation of the country's powerful food agro-industrial complex and to determine the possibilities of maximally increasing the food potential of each of them.

Regarding issues arising from the region-wide and intrarepublic problems, Comrade M. B. Babayev noted that the large national construction projects of the first five-year plans, the joint utilization of energy and water resources, the growing multilateral economic ties and the mutual assistance in all areas of economic and cultural life constitute one of the clear demonstrations of the inviolable friendship and unity of the peoples of Central Asia.

Uzbekistan, Turkmenistan and Tajikistan are cotton growing republics and have a common basis of principle for the formation of food branches since the most important of them are developing within the framework of the cotton complex.

But the natural and climatic conditions of Central Asia and the diversity of the valley, desert and mountain resources in each of its republics require an individual approach to the methods of more efficiently and effectively utilizing the resources for common purposes.

As was noted at the November (1981) Plenum of the CPSU Central Committee, one of the major tasks is to give agriculture more stability and independence from the vicissitudes of the weather. For even irrigation farming still does not guarantee the proper stability of production. Therefore it is necessary to apply agricultural devices and plant strains which provide large yields even when there is a shortage of irrigation water or when the sum of effective temperatures drops.

Questions of further increasing the fertility of the soil, assimilating scientifically substantiated crop rotations, effectively using fertilizers, fighting against erosion, protecting the plants and animals from diseases, raising the level of intensification of production, providing for year around utilization of irrigated land and introducing industrial technologies are of primary significance.

M. B. Babayev emphasized that only such a creative merging of agrozootechnical and economic sciences can provide for the development of an effective system of recommendations for practical implementation of the comprehensive measures for accelerated development of the branches of the food complex.

All the union republics have already developed food programs which are included in the plans for economic and social development under the Eleventh Five-Year Plan. But these programs should be regarded as a beginning of the large amount of work for discovering the largest reserves which have not yet been taken into account.

The solutions to these problems require that scientific and design institutions, planning agencies, ministries and departments, oblast and rayon economic teams and farm managers and specialists do purposive work for revealing all local possibilities of increasing food resources. We are speaking primarily about maximum utilization of the food potential of the cotton complex as one of the most powerful factors in increasing the production of milk and meat.

Additionally, it is necessary to search more persistently for sources of local resources. The Khovaling experimental production association will serve as a good example of the creation of large meat cattle raising in the cotton growing zones of the republic.

The most critical problems in Tajikistan have to do with the formation of developed suburban vegetable and dairy farming which will be capable in the next decade of fully solving the problem of satisfying the domestic demand for vegetables and potatoes.

The creation of a second branch of republic specialization--fruit, grape and citrus fruit growing--is a large socio-economic problem. The rapid formation of this specialization is now becoming a decisive condition for surmounting the conditions related to the small quantity of irrigated land in Tajikistan and an important factor in advancing the economy of all agriculture and providing for stable high rates of its development.

Even more issues arise in connection with the serious arrears in the system of procurements, storage, processing and trade in agricultural products as well as the need to eliminate the existing disproportion between these spheres of the agro-industrial food complex and agriculture itself. This, in turn, requires improvement of the administration of agricultural production, especially on the rayon level.

In conclusion, Comrade M. B. Babayev expressed his confidence that the Central Asian division of VASKhNil will provide for coordination of the efforts of the scientists of Uzbekistan, Turkmenia and Tajikistan for carrying out the responsible and noble tasks set for them.

S. Kh. Yuldashev, vice president of VASKhNIL, chairman of the Presidium of the Central Asian branch of VASKhNIL and an academician, gave a speech at the plenary session entitled "Practical and Scientific Problems in the Development of the Food Agro-Industrial Complex of Central Asia in Light of the Decisions of the CPSU Congress."

The speaker said that regional and republic comprehensive food programs are being developed in keeping with the decisions of the 26th CPSU Congress. Carrying out this complex and multifaceted task successfully depends on the active participation of the scientific community, workers of planning and agricultural agencies and managers of various ministries and departments in the development of the food program.

Providing for intensive and dynamic development of cotton growing, the leading branch of agriculture in Tajikistan, Turkmenistan and Uzbekistan, these republics from year to year increase the rates and scope of the production of the most important food products--grain, meat, milk, vegetables, melons, fruits and grapes. But an analysis of the condition of agriculture in these republics shows that there are many unsolved problems and unutilized possibilities here.

A sharp increase in the production of food products is impeded by the slow introduction of scientifically substantiated crop rotations, the weak feed base, the poor condition of land reclamation, inadequate organization of labor and production, and the imperfect system of material incentives.

The results of scientific research show that irrigated and non-irrigated land in Central Asia can produce much more of various kinds of products than it does now. This is confirmed by the experience of hundreds of leading farms that have achieved record indicators in the production of crop growing and animal husbandry products. Many kolkhozes and sovkhozes obtain 13.0-15.0 tons of feed units from each irrigated hectare.

The valuable experience accumulated by Tajik farmers in raising 2-3 harvest of feed and other crops in a year should be widely disseminated in other republics of Central Asia.

Tajik scientists and practitioners are also trail blazers in the assimilation of the non-irrigated land on expensive mountainous and foothill territories for obtaining large yields of grapes. Moreover, the intensive development of industrial orchard and vineyard raising, in turn, creates tasks for isolating highly productive new strains of fruits and grapes, citrus fruits and subtropical crops, taking into account the soil and climate peculiarities of the individual microregions of Central Asia. It is necessary to isolate new strains of grapes and fruits (spur and palm) that are suitable for mechanized cultivation and harvesting and lengthy storage and transportation.

In the opinion of S. Kh. Yuldashev, diverting part of the water from Siberian rivers into Central Asia will make it possible to irrigate hundreds of thousands of additional hectares of desert land and to make the region a large producer and supplier of vegetables, melons, citrus fruits, other fruits, grapes, grain, meat and milk.

There arises therefore a real need to expand comprehensive research and planning-investigatory work through the efforts of Central Asian republics and to strengthen their ties with the head institutes of the country that are engaged in the given problem.

S. Kh. Yuldashev said in conclusion that scientists and specialists will have to develop and substantiate proposals for planned comprehensive development of the food agro-industrial complex for a long-range period (20-25 years, taking into account acceleration of the process of intensification of production and improvement of its territorial organization in order to make a worthy contribution to the implementation of the decisions of the 26th CPSU Congress.

A. N. Maksumov, deputy chairman of the Tajik SSR Council of Ministers, corresponding member of VASKhNIL and academician, devoted his paper to the prospects and problems of the development of the agro-industrial food complex of the Tajik SSR.

The speaker emphasized that the large-scale program advanced by the party for full satisfaction of the country's demand for foodstuffs and accelerated solutions to the complex problems involving its implementation require extensive enlistment of science in the development of methodological, economic and organizational-technical fundamentals of effective functioning of all national economic units of the agro-industrial food complex.

It is therefore necessary to consider various aspects of the food problem in organic interconnection with the decisions that are made for sharply increasing the production of food products and providing for preservation and high quality characteristics in all stages of their movement to the consumer. Regional problems must be solved not only in close coordination with unionwide problems, but also with active coordination of forces and funds of all republics of such a large economic region of the country as Central Asia with its great prospects for producing food. The time has come to make the capabilities of each republic fully commensurable, adapting them to region-wide and unionwide national economic tasks.

Discussing in detail the state of affairs in agriculture in Tajikistan, the speaker emphasized that because of the implementation of the party's agrarian program all branches of agricultural production in the republic are developing more intensively. Thus the average annual grain production increased during the Tenth Five-Year Plan (for all categories of farms) by 45 percent, potatoes--by 32 percent, vegetables--by 29 percent, melon crops--by 66 percent, fruits--by 21 percent, grapes--by 41 percent, cattle and poultry--by 20 percent, milk--by 30 percent and eggs--by 56 percent.

The plan for the Eleventh Five-Year Plan includes for the first time tasks related to the development of the food complex. In order to satisfy more fully the growing demands of the population, a taut food program has been earmarked. The Gosplan and ministries and departments of the Tajik SSR, having enlisted scientific organizations of the republic, have begun to carry out the first stage of the food program which embraces the period of the Eleventh Five-Year Plan, and preplanning work is being done for the Twelfth Five-Year Plan.

Intensification of cotton growing and constant work for improving the quality of the raw material and increasing the proportion of the more valuable fine-fibered strains will continue in the future to be the main tasks in the republic's agriculture. But under current conditions the formation of the republic food complex requires radical changes in the branch structure of agriculture in order to give it the proper proportion and balance with all spheres of private and industrial consumption.

This statement of the problem was conditioned by at least two objective prerequisites for further development of the productive forces of agriculture in the Tajik SSR. In the first place, in ensued from current unionwide tasks for the formation of a powerful food complex for the country. In the second place, it reflects an intrarepublic situation which has arisen in recent years and is becoming increasingly crucial. This is related to the narrowing possibilities of expanding cotton growing because of the fact that its potential land resources have been exhausted while the population of the republic has continued to grow at the most rapid rates. This gives rise to a steady decline of the level of per capita agricultural production in value terms.

Therefore the plans for the next decade include the possibility of considerably advancing the food branches of agriculture, mainly on the basis of optimization of the structure of the planted areas of the cotton complex. Under these conditions the earmarked increase in the gross yields of cotton will have to be achieved largely through intensive factors. At the same time the essential expansion of the feed fields should be utilized in the most effective way for maximally increasing the production of meat and milk.

Regarding the situation in animal husbandry within the framework of the agro-industrial complex as a whole, the speaker emphasized that the right of this branch to use the land are absolutely equal to those of the cotton and other branch agricultural complexes. The most large-scale addition to the cotton complex will be the forced development of meat cattle raising in the suburban zones, the first of which is the large Khovaling experimental association for meat cattle raising that was creative in Kulyabskaya Oblast. Extensive territories of summer grazing and winter pasture territories are being intensified here, a fattening area to accomodate 20,000 cattle has been put into operation, and methods of industrial fattening combined with technology for raising young animals have been introduced. All this opens up new possibilities for increasing the production of inexpensive beef and points the way to effective assimilation of other, equally promising cattle raising zones of the republic.

Speaking of the unsolved problems in sheep raising in the republic, A. N. Maksumov said that the measures that have been taken so far have not produced the expected results: the number of head of sheep is not increasing, the pasturing is unskilled and the quality indicators are relatively low. The concentration of sheep raising on the rayon level which has just been started should be considered as a first step in improving administration of the branch.

Questions of efficient organization of feed production and feed preparation on an industrial basis presuppose that these industries be separated into an efficiently functioning independent branch.

It will be necessary to create highly intensive suburban vegetable and dairy farming in the regions where urban population and industry are concentrated.

There are also a number of serious national economic arguments in favor of creating our own potato growing and fully satisfying the needs of the republic. The most favorable conditions for this exist in the Garmskaya zone which, with the proper agrotechnology, can produce 300-350 quintals per hectare and successfully carry out the task that has been set. The creation of the necessary prerequisites for maximum acceleration of the rates of development of all agricultural production is envisioned primarily in the realization of the great possibilities that lie in extensive development of vineyards and orchards, for which there are large potential land resources.

Even now we must begin a mass changeover to the formation of the basic orchard and vineyard zones on a modern industrial basis and begin a complete reconstruction of the unique natural conditions for pit fruit raising in Isfarinskiy, Khozhenskiy and Ashtskiy rayons; we must significantly expand the zone for raising table grapes, primarily raisin grapes, in Leninabadskaya Oblast; we must create large orchards and vineyards in the foothills of the Gissarskaya and Yavanskaya valleys; we must take measures for accelerated development of the large zone for non-irrigation grape growing in Kulyabskaya Oblast; we must begin to assimilate the sloping lands of the Garmskaya zone for high-quality pit fruit growing; and, finally, we must begin to develop methods for industrial subtropical fruit growing and grape growing in Kurgan-Tyubinskaya Oblast, which has for this tens of thousands of hectares of presently empty arid land. We should also do a more detailed study of the possibilities of nut and pit fruit growing in Gorno-Badakhshanskaya Autonomous Oblast.

Citrus fruit growing should occupy a special place in the fruit and grape complex. The republic's rich experience in raising lemons in unheated trenches and the great effectiveness and labor-intensiveness of this branch give justification for raising it to the level of a republic specialization.

The speaker said that intensive formation of industrial fruit and grape growing requires a carefully worked out scientifically substantiated schema for the development and distribution of specialized enterprises, on the basis of which it would be possible to effectively arrange all of the organizational work for creating a developed system of farms in each of the aforementioned fruit and grape growing zones. It should be a concrete program of actions which determines both the scope and the time periods for carrying out the earmarked measures and the methods for rapidly establishing the branch, which is extremely important in its initial stage.

Thus in the republic's food complex which is being formed one can single out a group of branches that satisfy local needs (animal husbandry, vegetable raising and potato raising) and branches of republic agricultural specialization whose products, in addition to cotton, will be largely delivered to the unionwide fund in the future.

The implementation of the food program will depend to a decisive degree on how fully we follow the instructions of L. I. Brezhnev at the November (1981) Plenum of the CPSU Central Committee to the effect that it is necessary to "join into one the efforts in agriculture itself, in the branches of industry that serve it, and in the systems of procurements, storage, processing, transportation and trade in agricultural products." He was speaking about closing off channels for losses.

A great deal will have to be done in this respect, and above all it will be necessary to find the most rational ways of joining the activity of a whole number of ministries and departments into a single organizational and economic unit. So far we do not have the necessary correspondence in the level and scope of the development of agriculture, which comprises the heart of the complex, with the processing of the products obtained there or with industries which provide it with the necessary means of production. The lack of warehouses and storage facilities, specialized transportation and good roads are obstacles here.

Much depends on the location of the storage facilities. It is expedient to construct them in the places where the agricultural products are produced. This has a number of advantages, especially under the conditions of Tajikistan where the difficulty of transportation is exacerbated by the complicated mountainous relief of the locality.

It will be necessary to increase the capacities of specialized transportation and container shipments at accelerated rates and to construct enterprises for producing various kinds of packaging.

Special consideration must be given to the problem of the development and distribution of industry for initial processing of agricultural raw material. The formation of a food sub-complex in the republic should take into account the corresponding distribution throughout the territory of the republic of the construction of dairies and meat combines, wineries, juice enterprises, dry fruit enterprises and other processing enterprises.

Because of the increasing complication of economic ties as the developed republic and regional agro-industrial complex is being formed, questions of increasing the efficiency of administration are becoming more and more crucial. The evaluation of the specific current decisions should be strictly subordinate to the long-range goals for the development of the complex as a whole, the unification of the economic interests of the ministries, departments and production structures that are in various spheres of it, and the requirements for more efficient combination of branch and territorial planning and administration.

A large role is played by economic science here, which is called upon to creatively generalize the incipient forms of administration of the republic agro-industrial complex.

There is a persistent need, following the example of other republics, for extensive administrative experimentation in creating territorial agro-economic associations on the rayon level--RAPO.

At the earliest possible time we must change over to concrete modeling of various variants of current and long-range development of the branches of agriculture and more effective territorial organization of it which creates more favorable conditions for the introduction of industrial technologies and the achievement of the programmed yields of agricultural crops.

In conclusion, A. N. Maksumov said that the multifaceted problems of the agro-industrial food complex of the Tajik SSR can be resolved only in close connection with the regional tasks for agro-industrial development of the entire Central Asian economic region and the prospective formation of a large food complex.

At the plenary session of the scientific production conference, K. Sakhatmuradov, first deputy chairman of the Turkmen SSR Gosplan, gave a fact-filled report which was devoted to the main directions for the development of the food agro-industrial complex of the Turkmen SSR.

A total of about 60 reports were heard and discussed in detail at the plenary meeting and the three section meetings. The speakers included M. R. Noriyanets, chief of the agricultural division of the Uzbek SSR Gosplan; R. K. Rakhimov, director of the Institute of Economics of the Tajik SSR Academy of Sciences, corresponding member of the Tajik SSR Academy of Sciences; professor S. N. Usmanov, director of the Central Asian Scientific Research Institute of Economics of Agriculture, doctor of economic sciences; Kh. D. Dzhumankulov, director of the Tajik Scientific Research Institute of Farming; D. D. Dzhumakuliyev, deputy director of the Turkmen Scientific Research Institute of Economics of Agriculture; G. Ya. Kurtser, sector chief of the Institute of Economics of the Tajik SSR Academy of Sciences; S. I. Farsykhanov, director of the Tajik Scientific Research Institute of Animal Husbandry, and others.

The reports and speeches were devoted to various aspects of the problem of increasing the intensification of the branches of crop growing and animal husbandry, the development and increased efficiency of the food agro-industrial complex, theoretical and methodological questions related to the formation of the agro-industrial complex and optimal types of agricultural enterprises of various profiles, the development of branches of production in the social infrastructure in the system of the agro-industrial complex, problems of improving the economic mechanism, planning and administration of agricultural production and the development of scientifically substantiated normatives, and also generalization of the work experience of the agro-industrial complexes in the Uzbek, Turkmen and Tajik SSR's.

At the conference they developed and adopted detailed recommendations to be introduced into production.

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REGIONAL DEVELOPMENT

TAPPING FOOD POTENTIAL OF ODESSKAYA OBLAST

Moscow PRAVDA in Russian 15 Jul 82 p 2

[Article by N. Kirichenko, first secretary of the Odesskaya Oblast Committee of the Communist Party of the Ukraine: "Links of a Single Complex"]

> [Text] In whatever rayon and farm I have now visited, everywhere one of the main concerns was to more rapidly gather the harvest, to avoid its losses and to make a worthy contribution to the realization of the food program. To be sure, there is no person in the country that is not affected by the decisions of the May (1982) Plenum of the CPSU Central Committee. It set special tasks for party organizations. After all, as Comrade I. Brezhnev noted at the plenum, the moral and psychological climate in collectives, level of organization and discipline, labor efficiency and, consequently, final results depend on their work to a decisive degree. The organizational work of party members in Odesskaya Oblast is subordinate to this goal--mobilization of efforts for the attainment of high end results. A shock 10-day campaign for the harvesting and sale of grain to the state was declared in the oblast on 10 July.

Our oblast's farms have available vast areas--2 million hectares of arable land alone. The technical equipment of kolkhozes and sovkhozes and deliveries of mineral fertilizers increased during the last five-year plan. In brief, land and equipment for the production of products are available. Grain growers now grow quite good harvests. Livestock breeders obtain 74 quintals of meat and 326 quintals of milk on 100 hectares of land. This is almost twice as much as in 1965.

However, has the Odessa hectare exhausted its potentials? Of course, not. If production potentials are utilized skillfully, it will become much more generous. The growth of the yield is the main potential. Whereas during the Eighth Five-Year Plan every hectare produced 23.6 quintals of grain, on the average, during the 10th Five-Year Plan it produced 5 quintals more. A fight for a big grain harvest of the second year of the five-year plan is now waged.

Studying the data of the May Plenum, rural workers make many valuable suggestions aimed at shortening harvesting periods and increasing the production of valuable and strong wheat. A few days ago I had occasion to talk with N. Dovbenko, winner of the Ukrainian State Prize, chief of the mechanized detachment of the Kolkhoz imeni 20 S'yezda KPSS in Kominternovskiy Rayon.

"We still lose a great deal of grain," he said. "Poor preparation and inferior equipment repairs are the reasons for this. We do not make a sufficiently extensive use of the large-group method of machine operation. Meanwhile, advanced farms have attained a great deal here. We can learn something from them."

Such meetings and talks with rural workers gave us the idea to hold an oblast seminar for the preparation for the harvest. We organized it in Belgorod-Dnestrovskiy Rayon. This choice was not accidental. The farms of this rayon initiated the competition for completing the harvest campaign in 13 work days. Their initiative was supported on all kolkhozes and sovkhozes. Harvesting was to be carried out around the clock, by the watch method, primarily by the swath technique. Two crews were selected for each combine. Farms, where previously advanced experience had been poorly utilized, were uncovered. Help was given them to promptly repair equipment and a stock of spare parts was established. According to the estimates of specialists, all this will make it possible to shorten the time of the harvesting campaign, to reduce losses and to additionally obtain hundreds of thousands of tons of grain.

The diversity in the yield evokes a great deal of concern. For example, last year one out of 10 farms obtained less than 20 quintals of grain per hectare. Suffice it to pull them up to the average oblast level and the increase will amount to 200,000 tons of grain. This is one of the immediate tasks facing the established rayon agroindustrial associations. They must profoundly investigate why some kolkhozes and sovkhozes tolerate a low standard of farming, poorly utilize equipment and fertilizes and neglect seed breeding. They must not only investigate, but rectify the situation more rapidly.

The food program envisages intensified work on the selection of new varieties and hybrids of agricultural crops. The promising winter wheat varieties "Yuzhnaya Zarya," "Obriy," "Chayka" and "Parus" developed by F. Kirichenko, D. Dolgushin, S. Lifenko and other scientists at the All-Union Institute of Selection and Genetics proved their value on the oblast's strain testing plots last year. Measures are now taken to expand their sowings for next year's harvest.

The output of corn and oil and pulse crops can be increased in the southern oblasts of the Ukraine, including Odesskaya Oblast. The oblast's corn plantation now occupies more than 170,000 hectares. This crop is cultivated by an industrial method on almost the entire area. A total of 45 to 50 quintals of grain per hectare are to be obtained.

About 900 mechanized detachments and links are engaged in corn cultivation. It is obvious that by no means all field crop growers have perfectly mastered skills and experience. That is why A. Mardar', link leader on the Kolkhoz imeni Tatarbunarskoye Vosstaniye, Hero of Socialist Labor, who annually obtains 100 quintals of grain per hectare and more, offered to take patronage over young corn growers and to share his experience with them. Many colleagues of A. Mardar' followed his example. So-called pair competition, whose essence lies in the fact that advanced foremen themselves not only try to obtain a high harvest, but also give constant practical help to those under their patronage, has expanded in the oblast. More than 1,000 detachments and links, which cultivate corn, sugar beets and other crops, now participate in pair competition.

In the food program an important place is assigned to an improvement in the population's supply with fruits and vegetables. This year we plan to sell 453,000 tons of vegetables--more than ever--to the state.

Feed production acquires a specialized sectorial nature. An overall program for its development is envisaged. It includes an increase in land productivity and the construction of silage and haylage structures and facilities for the storage of hay, grain fodder and grass meal. With the help of patronage organizations in Odessa and other cities alone storage facilities for 28,700 tons of feed will now be built in the oblast. On farms intensive methods of management of animal husbandry are used ever more extensively and sections and complexes are reinforced with skilled personnel.

Right now it is possible to sharply increase meat production through "early maturing" sectors--poultry breeding and rabbit raising--and the fattening of livestock on individual and subsidiary farms of enterprises.

An interesting innovation was used on the Mayak Kolkhoz in Krasnooknyanskiy Rayon. Cow houses and other barns vacated for the summer were adapted for duck raising. A total of 170 tons of duck meat were obtained without big expenditures last year. This season there will be about 300 tons. The oblast committee supported this valuable initiative and party organizations saw to it that it became widespread. After all, various barns, sheds and stables are vacated on every farm in summer. Young stock, chickens and ducks are raised in them. The profitability of such production reaches 80 to 100 percent.

Private subsidiary farms can give a great deal of meat and milk and many eggs. It was noted at the May Plenum of the Central Committee that their share in the production of such products is quite significant. However, they need constant help. An oblast conference of chairmen of rural soviets and managers of procurement bodies, processing enterprises and other interested organizations, which discussed the ways of improving the operation of these farms, was held not long ago. Hundreds of thousands of hogs, a great deal of large-horned cattle and poultry and many sheep were sold to the oblast's population last year.

Naturally, the following question arises: What is the yield produced by private subsidiary farms? It is quite substantial. For example, last year their share in the total volume of agricultural output was as follows: meat (in carcass weight), 29.3 percent, milk, 16.2 percent, eggs, 43.4 percent, potatoes, 90 percent, vegetables, 14.7 percent and fruits and berries, 39.2 percent. Now during the first half-year 4,515 tons of milk have been received from them, which is many times more than during the same time last year.

It is necessary to further expand the share of private participation of kolkhoz members and other rural residents in the production of food products. However, a number of problems arise here. Private subsidiary farms are poorly provided with feed. There is a shortage of small-scale mechanization equipment and horticultural implements.

Contractual contacts with the population, which raises livestock and poultry for kolkhozes and sovkhozes, develop successfully in Odesskaya Oblast. A great deal of experience has been accumulated here. For example, on the Kolkhoz imeni Kutuzov in Tatarbunarskiy Rayon last year the population raised 12,000 geese, 500 hogs and 110 head of young large-horned cattle on the basis of contracts. A total of 25,500 head of livestock, 15,400 hogs and a great deal of poultry were fattened on cooperative terms throughout the oblast. As a result, about 9,000 tons of meat were obtained and sold to the state.

This form of contractual relations makes it possible to most efficiently utilize the oblast's fodder resources and to obtain feed from areas inaccessible for mechanized harvesting and the grazing of public livestock. Housewives and schoolchildren and students during vacation are involved in the sphere of production.

We also utilize such a promising source as rabbit raising. The practical experience in rabbit breeding on the Progress Kolkhoz in Izmail'skiy Rayon shows the great advantage of this sector. A standard mechanized section was put into operation there. A total of 69 tons of diet meat were sold last year.

Subsidiary farms, where livestock and poultry are raised, vegetables, fruits and mushrooms are grown and fish is bred, have been organized at many industrial enterprises in the oblast. There are now 35 such farms. As many are being established. The yield of subsidiary farms is big. For example, at the Izmail Ship Repair Plant such a farm supplies meat and vegetables to public dining enterprises. Furthermore, workers and employees can purchase products here. However, the rights of subsidiary farms of enterprises have not yet been consolidated legally. Funds for equipment, building materials and mineral fertilizers are not allocated to them. It is time for the USSR Gosplan to give thought to this.

Furthermore, by no means all ministries and departments manifest interest in the establishment of such farms.

There are still many shortcomings in the selection of personnel. Extensive work on the transfer of farms to full cost accounting is ahead. After all, in its very essence a kolkhoz is a cost accounting subdivision. The party and the state once again helped kolkhozes, adopting a decision on an increase in purchase prices of a number of products and revoking and deferring the payment of debts. It is necessary to increase the efficiency of organizational work of rural party members and to strive for stable economic conditions for the introduction of true, not formal, cost accounting, which will make it possible to stimulate the growth of production of food products.

The goal is clear. Party members and rural workers in the oblast have sufficient forces and physical assets to fulfill the party's plans aimed at a rise in the people's well-being.

11,439
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AGRO-ECONOMICS AND ORGANIZATION

JOINT DECREE ON MARKETING NONSURPLUS FRUITS, VEGETABLES

Moscow SEL'SKAYA ZHIZN' in Russian 7 Aug 82 p 1

[Unattributed report: "In the CPSU Central Committee and USSR Council of Ministers"]

> [Text] The CPSU Central Committee and USSR Council of Ministers have adopted a decree "On Supplementary Measures for Expanding the Sale of Fruit and Vegetable Production by Kolkhozes, Sovkhozes and Other Agricultural Enterprises to Consumer Cooperative Organizations and in Kolkhoz Markets."

To utilize more fully the resources of fruit and vegetable production for improving the supply of the population, the decree authorizes kolkhozes, sovkhozes and other agricultural enterprises to sell vegetables, melons, fruits and berries (except table grapes, onions and garlic) to consumer cooperative organizations and in the kolkhoz markets at prices determined by agreement between the parties. They may do so to an amount up to 10 percent of the planned volume of their deliveries, as well as the above-plan production of these crops which will be credited toward state plan fulfillment. It is stipulated that the sale of these products by kolkhozes, sovkhozes and other agricultural enterprises to consumer cooperative organizations and in the kolkhoz markets will be conducted in proportion to their sales to the state (for each type of product).

Vegetables, melons, fruits and berries not accepted by procurement organizations can be sold by kolkhozes, sovkhozes and other agricultural enterprises to state and cooperative organizations and in kolkhoz markets at prices determined by agreement of the parties, with the inclusion of that production in the fulfillment of the sale plan to the state.

Farms for which state procurement plans of vegetables, melons, fruits and berries have not been established will sell their output at their own discretion.

The USSR Ministry of Procurement, USSR Ministry of Agriculture, USSR Ministry of the Fruit and Vegetable Industry, USSR Ministry of Finance and the USSR Central Statistical Administration are charged with setting up a procedure whereby sales of vegetables, melons, fruits and berries by kolkhozes, sovkhozes and other agricultural enterprises to consumer cooperative organizations and in kolkhoz markets are accounted for toward fulfillment of the state procurement plan in accordance with the adopted decree.

The councils of ministers of the union and autonomous republics, krayispolkoms, oblispolkoms, gorispolkoms and rayispolkoms are charged with adopting additional measures for improving the work of kolkhoz markets and strengthening their material-technical bases. They are obligated to assist kolkhozes, sovkhozes and other agricultural enterprises in the organization of deliveries and sale of agricultural production, not to permit unjustifiable restrictions on the sale of vegetables, melons, fruits and berries to consumer cooperatives and in the kolkhoz markets, and on the removal of these products beyond the boundaries of oblasts, krays, and republics. It is proposed that a widespread network of trade service bureaus be created within the kolkhoz markets, that necessary trade and warehouse facilities be allocated to farms, and also that kolkhoz and sovkhoz stores, booths and stalls be opened at the markets.

The CPSU Central Committee and the USSR Council of Ministers have obligated the central committees of the communist parties and the councils of ministers of the union republics, local party and soviet organs to strengthen control over the activity of procurement organizations, to increase their role and responsibility over the fulfillment of the plan for the procurement of vegetables and fruits and their prompt delivery to cities and industrial centers, as well as to guarantee immediate and unconditional fulfillment of the planned tasks in supplying all types of fruit and vegetable products to the all-union stock.

CSO: 1824/519

AGRO-ECONOMICS AND ORGANIZATION

MOSCOW AREA PLANS FOR IMPLEMENTATION OF FOOD PROGRAM

Moscow SEL'SKAYA ZHIZN' in Russian 2 Jun 82 p 2

[Article: "Muscovites to Agriculture"]

[Text] It was with heartfelt approval and unanimous support that the workers of the capital greeted the decisions of the May (1982) Plenum of the CPSU Central Committee and the country's food program which it approved.

It was emphasized at meetings and gatherings of labor collectives that Muscovites will multiply their contribution to the implementation of the party's agrarian program and the intentions of the 26th CPSU Congress. Moscow is responding to the party's concern for the well-being of the worker with a new scale of socialist competition for early fulfillment of the plans of the anniversary year and the five-year plan as a whole.

The meeting of the aktiv of the city CPSU organization that was held on 1 June directed collectives, party and soviet agencies and all workers of Moscow toward a further search for reserves and fuller utilization of the capabilities of the capital's industrial and scientific potential for rendering assistance to agriculture. They considered the results of the Plenum of the CPSU Central Committee and the tasks of the capital's party organization for implementing the USSR food program and acting on the points and conclusions in the speech at the Plenum by Comrade L. I. Breszhnev.

V. V. Grishin, a member of the Politburo of the CPSU Central Committee and first secretary of the Moscow city committee of the CPSU gave a report at the meeting. He emphasized that the Plenum of the CPSU Central Committee, the report of Comrade L. I. Brezhnev and the USSR food program evoked immense enthusiasm among Moscow residents. Communists and all workers of the capital along with the party and all Soviet people unanimously support the program for improving the country's food situation. The Moscow city party organization is called upon to develop active work for implementing the many measures that were earmarked by the CPSU.

In the report and speeches they analyzed in detail the activity of party, soviet and economic agencies as well as trade-union and Komsomol organizations of the capital in relation to the implementation of the party's agrarian policy. They considered a complex of measures that Muscovites will have to implement in order to fulfill the food program and the decrees of the CPSU Central Committee and the USSR Council of Ministers that were adopted in this connection.

It was noted that the workers of the capital are making a weighty contribution to the implementation of the party's plans. Here is one figure: 150 enterprises of Moscow produce machine tools, motor vehicles, electric engines, various equipment and spare parts for agriculture. Under the current five-year plan these deliveries will amount to an immense sum: 1.4 billion rubles. In 1981 the plants and factories of the capital filled all orders for agriculture. In the first quarter of this year they delivered in excess of the plan 400 trucks, almost 180,000 rubles' worth of instruments, tens of thousands of bearings, 280 tons of polyethylene and many other products.

Still, it was said at the meeting, there are shortcomings in the work of the enterprises for producing technical equipment for agriculture. Thus recently there has been a reduction in the output of agricultural machines and spare parts for tractors. Certain enterprises produce poor-quality products for agriculture, violate contractual commitments for deliveries of equipment to the kolkhozes and sovkhozes, and do not completely fulfill assignments with respect to the list of items. To achieve unconditional fulfillment of assignments and commitments and to raise the technical level and improve the reliability and quality of the products for agricultural workers constitute the duty of party organizations and executives of enterprises that fill orders for agriculture.

Science is to play a large role in implementing the food program. In Moscow there are about 100 scientific academic institutions, branch institutes and design organizations engaged in problems of intensification of agricultural production and the transfer of it to an industrial basis. Collectives of scientific research institutes and design bureaus have committed themselves to introducing into production about 200 models of highly efficient technical equipment for agriculture. But, the speakers noted, the scientific potential and the creative capabilities of these organizations are not always utilized efficiently. Thus, in the main areas of agricultural science they are now carrying out more than 100 programs of various ministries and departments, which leads to unnecessary duplication, dispersion of efforts and funds, and prolonged time periods for completing developments. It is necessary to make scientific institutions operate efficiently, to increase the role of local party organizations and CPSU raykoms in this, and to step up the activity of communists who are working for the needs of the agro-industrial complex.

At the meeting a great deal of attention was devoted to the workers of the food, meat-dairy and fish industry. There are now more than 100 of them in Moscow. They produce a large volume of products. But certain of them do not operate regularly. The speakers made specific suggestions toward eliminating shortcomings.

When considering questions of strengthening the material and technical base of the country's agro-industrial complex, participants in the meeting pointed out the great volume of capital construction in this branch that will have to be carried out by Moscow organizations. Thus on the kolkhozes and sovkhozes of the nonchernozem zone of the RSFSR it is intended to do construction and installation work valued at 216 million rubles during the five-year plan. A number of large animal husbandry and hog raising complexes, new capacities for poultry farms, residential buildings with an overall area of 300,000 square meters, schools, children's preschool institutions, and facilities for municipal and personal purposes will be introduced.

Having noted that there has been delay in the construction of many facilities of the agro-industrial complex, participants in the meeting discussed the need to provide for efficient utilization of capital investments that are allotted for agricultural construction. It was emphasized that is it necessary to increase capacities primarily as a result of technical re-equipment of existing enterprises and industries. It is the demand of the time that the gorkom and CPSU raykoms as well as local party organizations assume strict control over the construction of all facilities of the agro-industrial complex. Participants in the meeting discussed in detail the tasks for improving trade in foodstuffs as well as measures for improving the organization of their storage and utilization. In particular, it will be necessary to improve and expand direct ties in the schema "field--store" with farms of Moscow Oblast.

Describing the tasks facing Moscow transportation organizations, participants in the meeting devoted special attention to problems of expanding container delivery of food products and increasing the fleet of low-temperature and refrigerated railroad and automotive transportation for shipments.

The speakers took note of the Muscovites' sponsorship assistance to agricultural workers which has increased from year to year. It is now provided by collectives of 2,400 enterprises and organizations of the capital. Many of them use their own reserves to manufacture and delivery to the kolkhozes and sovkhozes near Moscow machines, sets of equipment, mechanisms, components and parts, and spare parts for tractors and combines, and also instruments, materials and tools. City labor collectives are rendering assistance to agriculture in the design and construction of animal husbandry farms, feed shops, grain threshing floors and grain dryers, hothouses and storehouses, as well as the repair of agricultural equipment. The participation of more than 70,000 Moscow workers in harvesting the crops is a great help to agriculture.

It is necessary to step up the work for the development of subsidiary farms. Moscow enterprises and organizations have a total of only 60 of these farms. Their contribution to supplying the city's population with food is insignificant. They said at the meeting that this contribution should be greater.

When considering the tasks of party, soviet and public organizations of the capital in relation to the implementation of the party's agrarian policy, the speakers devoted a great deal of attention to questions of ideological support for the earmarked plans.

It was emphasized in a unanimously adopted resolution that the decisions of the Plenum of the CPSU Central Committee will be the basis of all the activity of the city's party organization. Participants in the meeting assured the CPSU Central Committee that the Moscow city party organization will do everything necessary to make the greatest possible contribution to the implementation of the food program as well as the tasks set by the May Plenum of the CPSU Central Committee.

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AGRO-ECONOMICS AND ORGANIZATION

EFFICIENCY, COOPERATION NEEDED IN INTERFARM OPERATIONS

Moscow SEL'SKAYA ZHIZN' in Russian 21 Jul 82 p 1

/Article: "Raising the Effectiveness of Cooperation"/

/Text/ The Kolkhoz imeni Uritskiy in Gomel'skaya Oblast is performing the functions of an interfarm enterprise. It fattens the cattle being received from 17 farms in Gomel'skiy Rayon. The intensive production of feed has been organized on its lands and the cultivation of other crops is being carried out by its partners in cooperation. During the period of time that this enterprise has been in operation, beef production in the rayon has increased by one and a half times and labor expenditures per quintal of output have decreased by 30 percent. Production profitability here is twice as high as the average for the oblast. As a result of this joint activity, 13.5 million rubles worth of profits have been obtained, a large portion of which has been transferred over to the participating farms.

Such examples of high production efficiency, organized on the basis of cooperation, can now be found in every republic and in many rayons and oblasts. There are approximately 10,000 interfarm enterprises and organizations and more than 500 production agroindustrial and agricultural associations in operation throughout the country. This new type of enterprise in the rural areas produces large quantities of diverse products. In the food program for the USSR, approved during the May (1982) Plenum of the CC CPSU, the plans call for measures aimed at further improving production specialization, concentration and interfarm cooperation.

Enterprises created through the joint efforts of kolkhozes and sovkhozes are producing meat, milk, raising pedigree livestock and growing feed, seed, vegetables, fruit, grapes and other crops. Cooperation is being employed extensively in connection with the use of equipment, in construction, land reclamation and in the use of chemical processes. Many sanatoriums, rest homes, kindergartens, nurseries, young pioneer camps and enterprises of a domestic nature operate on the basis of this progressive method.

A high level of efficiency is being achieved by those kolkhozes and sovkhozes which are creating enterprises for the joint production and processing of products and for storing and selling them. Such cooperation is making it possible to increase production, reduce losses and raise the quality of fruits and vegetables and other highly perishable products. Thus the Pridneprovskiy Kolkhoz in Nikopol'skiy Rayon in Dnepropetrovskaya Oblast, which performs the functions of an interfarm enterprise, has over a period of 5 years of joint operations increased its production of fruit and vegetable products by almost twofold and expanded its assortment to 35 types. During this period of time, 7 million more rubles worth of vegetables, fruit and canned goods have been shipped to the state. As a result of such cooperation, each participating farm receives more than 100,000 rubles of net income annually.

Interfarm cooperation and agroindustrial integration constitute a great and complicated task and one which requires daily attention, efficient management and a detailed analysis of the practical results. Correct actions are being taken in those areas where this work is being carried out in a planned manner and in a complex with other measures directed towards the intensification of agricultural production. It must not be forgotten that only a well thought out organization for such joint enterprises and associations makes it possible to increase the rates of growth for output production, while at the same time reducing expenditures and lowering the amount of time required to achieve high final results.

Unfortunately, the complexity of this process is not being taken into account in a number of areas and the principles underlying the creation of interfarm enterprises and associations are being violated. As a result, the efficiency of joint production is lowered as is also the influence it exerts with regard to strengthening the economies of the participating farms. Thus it happens that many cooperative formations sustain losses rather than reaping profit. There are many unprofitable enterprises to be found in Armenia, Azerbaijan, Tajikistan, Turkmenia and in certain oblasts in the RSFSR, the Ukraine and Belorussia.

The operational shortcomings noted in specialization based upon cooperation derive mainly from the fact that the interfarm formations are often created in haste and in the absence of a comprehensive study of all of the mutually related problems and of the required technical-economic justification. Thus, in Tambovskaya, Rostovskaya and a number of other oblasts, during the creation of certain enterprises for the maturing and fattening of cattle, no consideration was given to the need for ensuring the availability of internally produced feed and skilled personnel or for introducing a progressive technology or scientific organization of labor into operations. Quite often violations are tolerated in the mutually advantageous cost accounting relationships and in the system for distributing the profit obtained among the interfarm enterprises and participating farms.

In a number of areas the democratic principles underlying the creation and administration of interfarm organizations are being violated, the role played by their councils negated and excessive administration is being tolerated. As a result, the size of the administrative apparatus is growing in an unjustified manner and the responsibility of the kolkhozes and sovkhozes for the work of the enterprises created by them is being lowered. The USSR Ministry of Agriculture and its organs in the various areas must play a more active role and they must undertake measures aimed at eliminating these negative phenomena in the development of cooperation.

The selection of the best organizational forms for cooperation and agroindustrial integration, so as to conform with the various branches of farming and livestock production, requires special attention by the party committees, agricultural organs and scientific research institutes. A thorough study should be undertaken of leading practice and the most acceptable and most effective forms for each particular branch should be selected from among the great variety of forms available. Associations must be created which will furnish cheap products, raise productivity and truly raise to a new level the socialist collectivization of production and labor.

Life and experience have proven quite convincingly that, by virtue of joint efforts, the kolkhozes and sovkhozes utilize their labor and material resources more efficiently, they increase their yields and sales of products to the state and they reduce the expenditures required to produce these products. Thus, this work must be carried out in a more active manner, with every attempt being made to eliminate mistakes and miscalculations. A high level of effectiveness for interfarm cooperation will promote a reliable and accelerated development for agriculture, satisfaction of the increasing requirements for food products and successful implementation of the country's food program.

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AGRO-ECONOMICS AND ORGANIZATION

FRUIT, VEGETABLES FROM ESTONIAN PRIVATE PLOTS, COLLECTIVE GARDENING

Moscow IZVESTIYA in Russian 14 Jun 82 p 2

[Article by Ye. Spiridonov (Tallinn): "Apple Trees Line Suburban Boulevards"]

> [Text] "To take extensive advantage of private subsidiary farms of citizens, collective gardening and orchard raising."
>
> From the USSR food program
> for the period up to 1990

> In Estonia today there are 700 gardening cooperatives which join together 40,000 owners of plots and, including their families, about 160,000 people. The republic's urban population is somewhere around a million. It turns out that almost every sixth urban resident has joined in collective gardening. If this were not the case where would one find the labor reserve to plant about 400,000 trees and 500,000 berry bushes, to construct 260,000 square meters of hothouses, to plant 100 hectares of strawberries and raspberries and as many decorative gardens. Private subsidiary farms and orchard-garden plots produce 85 percent of all the fruits and vegetables procured in Estonia. Moreover, the organization of gardening cooperatives has removed a mass of problems in the organization of the recreation of workers and their family members.

What surprises guests and tourists in Estonia? Of course, the imagination is impressed by the great medieval castles and the originality of the modern architecture. Naturally, one cannot but be enraptured by the fairlike atmos phere of the small stores and the unique comfort of the "toy" cafes. But the green setting of the cities does not fade before the sights of the republic. When one passes through a garden area located on a plantation kilometers from Tallinn one does not lose the feeling that one is still on the outskirts of the city. Efficiently planned squares of brick buildings, asphalt roads, regular bus and railroad transportation--everything is as in the city, right down to the numbering of the buildings and the names of the streets: Apple Boulevard, Plum . . . .

And this is a little city--the garden city of the Muugaskoye division of the society of gardeners and beekeepers--one of the 37 green companions that have grown up on the outskirts of cities. The head of the administration for material and technical supply of the republic Ministry of Fruit and Vegetable Raising, Anatoliy

Aleksandrovich Kiyet, explains why the organization of public farming should be on a high level. The division has about 2,000 garden plots. And almost every owner has a one-story or two-story with a fireplace, a bath, a garage, a hothouse and work premises. During the period from May through October up to 15,000 people gather in the green zone. And one must do everything necessary so that the people can work to their hearts content on the land and rest when they want to. The population of the Muugaskove garden city experience no inconvenience from the fact that they spend six months of the year in the outskirts of the capital. Their garden village has central heating, running water and electricity. There is a club and stores for food, industrial goods and household needs. The construction of a productiion training complex is being completed. In the pressing shop which works on the self-service principal it will be possible to prepare juices, and in the training kitchen they will show one how to preserve fruits and vegetables. And if there are surplus products they must be taken to the market. One need only take them to the receiving points of the Ministry of Fruit and Vegetable Growing and the consumers' cooperatives which function on the territory of the little city and they are sold right there through the trade network.

For the reader who knows the general condition of the organization of gardening, this situation will be unexpected. He will say, but what about the difficulties with allotting the land, assimilating it and purchasing construction materials and gardening equipment?

The first condition which facilitates the solution to all these problems is the supportive attitude toward collective gardening and orchard raising which has existed in the republic since the time they were established. The first gardening societies appeared in Estonia as early as 1949 when an individual owner was allotted 50 hectares of uncultivated land. Since that time the individual sector of agricultural production has consistently increased because of the fact that the kolkhozes and sovkhozes and the Ministry of Forestry and Protection of Nature, taking into account the fact that each bit of land should produce a yield, are searching for abandoned land and giving it over for the construction of gardening cooperatives.

"We have always thought that the individual sector of agricultural production is a necessary support for the public sector," says the chief of the agricultural division of the Estonian SSR Council of Ministers, Guydo Valentinovich Taliyarv. Practice confirms this. Last year more than 10,000 tons of fruits and berries and 2,000 tons of potatoes and vegetables were obtained from the cooperative gardens of the republic. And the land at the disposal of the gardeners amounts to 4,804 hectares. They take 550-600 grams of products from each square meter. The kolkhozes and sovkhozes obtain 1 kilogram. But they have significant expenditures on agrotechnical measures and wages, while here, without expenditures of public labor, we receive an appreciable additional amount of food for the public table.

An important condition which provides for the great socio-economic effect of the development of collective gardening and orchard raising is the skillful administration of this section of the economy on the republic-wide scale. According to the established policy, the building up of gardening cooperatives is permitted only with established plans for detailed planning of localities that are being assimilated, a constituent part of which are the plans for the location of the cooperative, the plan for municipal services networks, plans for planting greenery and plans for all the facilities that are constructed. And state planning institutes, productive groups of the cities' main architectural offices and rayon architectural offices are responsible for drawing up the plan for constructing gardening cooperatives. Thus the building up of the plots of land is regulated from the very beginning by architectural and construction norms. This is why the gardening cooperatives of the republic fit into the landscape harmoniously and serve as a beautiful green setting for the valuable "stones" of the cities.

But a plan is only a plan. On paper it is possible to draw any "pictures." But how in practice does one organize things in such a way that the owner of the plot constructs what he has set out to construct and not what has turned out from the materials that he managed to obtain? How does one protect the natural landscape from the ridiculous and comical self-built dacha-like structures?

Of course, if the rayon and city soviets of peoples' deputies limit their activity to allotting land and even approving the plans for building, the arrangement of the land allotted for the cooperatives would still lead to "surprises" of architecture and construction. Who knows what might happen when the individual builder comes up against any difficulties! In order for this not to happen, the local agencies of authority take on the responsibility for the organization of the joint activity of the cooperatives which is related to the assimilation of the land, and they direct and supervise it.

For example, many gardening cooperatives are concentrated in certain regions of the republic. If this work were neglected, thousands of people would crowd into various organizations and departments and each would "drive" his questions through with varying amounts of success. And it is an entirely different matter when all questions of dacha arrangement and service are resolved for the communities that are located on a single territory. And not by just anyone, but by competent specialists as is done, for example, in Khar'yuskiy Rayon in the republic. A division of gardening cooperatives has been organized under the local soviet of peoples' deputies here. It includes engineers, construction workers, agronomists and lawyers. Of course their work is paid for through the financial deductions from the communities themselves, but the establishment of the cooperative takes place in a planned way, without exhausting "red tape." After the establishment of the plan for the building by the construction commission of the rayispolkom, specialists of the division make sure that it is carried out and foresee possible complications. In general the process of the assimilation of the territory is carried out in such a way that the observance of the architectural and technical construction norms by the individual builders has become a fact.

A situation in which the local soviet of peoples' deputies is well aware of what is being constructed where makes it possible to optimally combine the wishes of the owner of the plot and the regulations for garden cooperatives. One can select any of the standard plans that are included in the publications of the catalog of garden buildings that is published by the Estonian SSR Gosstroy and even suggest changes in them, coordinate the individual plan with architectural agencies and, finally, buy a prepared building--all this binds one to the locality. But after the establishment of the general plan for the cooperative one does not have the right to change anything. The commission of the rayispolkom, which includes the architectural office and representatives of the municipal division, fire protection service, and sanitary and epidemiological station, accepts for operation not individual construction projects, but the cooperative as a whole. And what one finds in "reality" must coorespond strictly to what was on the "picture." The external appearance of the building, the volume of construction materials, the estimated cost of construction and location of other structures on the section--all these are regulated by the plan. And another detail that is of no small importance: the owner must present receipts, bills of lading, and commercial transport information for all the construction materials that are used.

In order for the individual builder to be confined to such strict regulation, the republic has organized a system of material and technical support for collective gardening. At the Tallinn machine building plant imeni Lauristin I spoke with the workers who in September of last year became members of the Rita gardening cooperative. As the chief of the legal division of the enterprise, Oleg Tankhumovich Romm, put it, he was not given the best section--marsh from one end to the other. But a year had not passed before the land was cultivated. He had already shipped in sand and gravel purchased from a mine for the construction of a one-story garden building with three rooms. He obtained the silicate brick and cinder blocks from the Estontara base. O. Romm is convinced that he will be able to complete the entire plan for the building in the five years that have been given to the cooperative for the assimilation of the territory.

And what is the feeling of those who are dealing with problems of obtaining a crop from their own plot? Members of the Mashinostroitel' gardening cooperative which was created 15 years ago were unable to name any difficulties related to gardening. The subsidiary farms of the Tallinn poultry enterprise produce sufficient quantities of compost made of organic mineral mixtures, they say. It is easy to purchase the necessary supply from the stores of the city or directly from the gardening villages. Moreover, the enterprise is concerned about providing equipment for the gardeners. Thus, on an order from the cooperative, the plant manufactured electric mowers, furnaces for bath and gates, and was allotted waste materials for building fences around the territory of the garden. The enterprise is prepared to grant transportation to the gardeners at any time.

Of course the republic society of gardeners and beekeepers plays a leading role in organizing the material and technical support for collective gardening. Through the quarterly committees of the cooperatives and the board of the divisions of the society it obtains complete information about the needs of the citizens who have private subsidiary farms, and through the Estonian SSR Gossnab it orders the manufacture of the necessary technical means and materials. Independent design bureaus of the society also provide an impulse for improving the support of the gardeners by suggesting to industrial enterprises that they produce means of minor mechanization which they have developed. One of these active "contractors" of the gardeners is the Vazar association of the republic Ministry of Local Industry.

All this contributes to a situation where the gardeners of Estonia actually play the role of private subsidiary farms and garden and orchard cooperatives in the fulfillment of the USSR food program which was approved by the May (1982) Plenum of the CPSU Central Committee. They have set for themselves the task of obtaining up to 80 grams of products from each square meter of land in the next few years, that is, more than a 1.5-increase over what they are raising now!

11772
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AGRICULTURAL MACHINERY AND EQUIPMENT

PREPARATION OF EQUIPMENT FOR UKRAINIAN HARVEST OPERATIONS

Moscow PRAVDA in Russian 29 Jun 82 p 1

/Article by M. Odinets, Ukrainian SSR: "The Harvest Draws Near"/

> /Text/ The preparation of equipment for the harvest operations has been completed at the Bortnichi Sovkhoz in Kiyevskaya Oblast. A great amount of work was performed in this regard by machine operator Nikolay Deynegi, who is presently engaged in cutting down perennial grasses. Together with his comrades, he displayed concern in advance for ensuring that eight grain-harvesting combines were moved up to the readiness line. All of the requirements for continuous operation of the machines have been met here -- the required supply of parts, needed for correcting breakdowns and for the technical servicing of units, has been created.

Fine preparations were made for the harvest operations at the Starinskaya Poultry Factory Sovkhoz. Here, all of the harvesting equipment was also repaired. The machine operators at the Dudarkovskiy, Glybokskiy and other sovkhozes issued reports on the readiness of the machines for moving out onto the fields. All of the kolkhozes and sovkhozes in Kiyevskaya Oblast are following the example of the farms in Borispol'skiy Rayon.

Yes and for the republic as a whole the repair of equipment in behalf of the harvest operations is being carried out in conformity with the schedule. Approximately 97 percent of the grain harvesting combines and harvesters, 99 percent of the mowing units and 89 percent of the silage-harvesting comines have been moved up to the readiness line. The machine operators in Khersonskaya, Odesskaya and Khar'kovskaya Oblasts are completing their repair operations.

In conformity with the decisions handed down during the May (1982) Plenum of the CC CPSU, the party organizations and agricultural leaders and specialists are devoting special attention to the use of leading methods for organizing labor. In the Crimea, for example, where the barley harvest has already commenced, extensive use is being made of the large group method of equipment operation and this is making it possible to maneuver the machines in an efficient manner, shorten the harvesting periods and reduce crop losses. Here many farms have made fine preparations for moving out onto the fields. Thus, at the Rossiya Kolkhoz in Dzhankoyskiy Rayon, at the Udarnik Sovkhoz and at the Krymskiy State Poultry

Breeding Plant the collectives of harvesting-transport detachments were ready for the busy harvest period. These collectives will carry out an entire volume of work from harvesting the grain to plowing up the soil for next year's crops. These detachments consists of experienced combine and tractor operators and motor vehicle drivers. These individuals are acquainted with the conditions for the socialist competition and the measures for issuing moral and material incentives.

In order to ensure continuous operation of the machines during the harvest period, the machine operators in the Crimea prepared 183 mobile motor vehicle repair workshops, all of which are equipped with welding units and the necessary instruments and spare parts. Two hundred and seventy teams of raysel'khoztekhnika are providing them with assistance in servicing the harvesting units.

However, the harvest preparations are being carried out slowly in some areas. The repair rates on farms in Poltavskaya, Kirovogradskaya and L'vovskaya Oblasts are lower than those for last year. For example, approximately 100 combines have still not been restored in Poltavskaya Oblast.

Work is proceeding slowly in workshops in Volodarsko-Volynskiy Rayon in Zhitomirskaya Oblast. The Iskra, Druzhba and Mayak Kolkhozes have fallen behind in carrying out their work. Nor is the situation any better in Luginskiy Rayon, where there are still many combines in need of repair work.

Recently the machine operators in Chernigovskaya Oblast intensified the tempo of their equipment repair work and yet the coefficient of readiness for the combines still remains low. The restoration of combines is still behind schedule in Bakhmachskiy, Bobrovitskiy, Ichnyanskiy and other rayons. Specialists attached to Gossel'tekhnadzor /State Inspection for Supervision of the Technical Status of the Machine-Tractor Pool of the RSFSR Ministry of Agriculture/ inspected 797 combines released from workshops and uncovered defects in 77 of them. Dozens of T-150 tractors have yet to be repaired. In a number of rayons there are not enough machine operators for organizing the number of combine crews required.

It bears mentioning that many complaints are being received at the present time regarding the work of Sel'khoztekhnika enterprises. For example, the workshops of Voroshilovgradskaya Oblast Sel'khoztekhnika did not fulfill their five-month plan for the repair of grain harvesting combines. We are still encountering instances of machines being released from workshops with the work not yet completed and lacking the devices required for guarding against crop losses.

The agricultural workers are addressing serious complaints against a number of industrial enterprises for failing to fulfill the plans for the delivery of spare parts. For example, the Voroshilovgrad Crankshaft Plant did not supply shafts for the SMD-14 engines. Over a period of 5 months this year, it fell behind in its deliveries by 2,000 crankshafts. During this same period of time, the Rubtsovsk plant for tractor spare parts failed to supply tens of thousands of driving wheels. The Krasnoyarsk Combine Plant has yet to commence shipments of pins for the cutting unit.

Very little time remains before the commencement of mass grain harvesting operations in the Ukraine. It is a matter of honor for the machine operators to be fully prepared for the harvest season.

7026
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AGRICULTURAL MACHINERY AND EQUIPMENT

BRIEFS

EQUIPMENT REPAIR OPERATIONS--The agricultural machine operators in Kazakhstan have repaired approximately 80,000 combines and more than half of their harvesters. In particular, this work is being carried out successfully in Tselinogradskaya and Kustanayskaya Oblasts. However, on some farms in Dzhezkazganskaya, Ural'skaya, Turgayskaya and other oblasts the repair work is being carried out at a slow tempo: There is a shortage of personnel in the workshops, the labor discipline is not being followed and the supply of spare parts has been poorly organized. /Text/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 1 Jul 82 p 3/ 7026

EQUIPMENT REPAIRS ACCELERATED--Only a short time remains before the commencement of mass harvesting operations throughout the republic. The machine operators are striving to move their combines and harvesters up to the readiness line on schedule and to complete repairs to the threshing floors. The farms in Kustanayskaya, Tselinogradskaya, Severo-Kazakhstanskaya, Kokchetavskaya and Pavlodarskaya Oblasts are the leaders in the carrying out of this work. At the farms in the first two oblasts 80 percent of the combines and the main portion of the harvesters have been put in proper working order. The carrying out of repairs on a year-round basis has been introduced into operations here. In a number of rayons, all of the combines had been prepared for operations in April and May. The farms in Aktyubinskaya, Ural'skaya and Kzyl-Ordinskaya Oblasts are falling behind. Here almost 40 percent of the steppe ships are in need of repairs. The reason -- shortcomings in the organization of the repair operations. The situation is presently being corrected. A large number of machine operators have been assigned to the workshops. The untimely deliveries of spare parts are having an effect on the tempo of the repair work. Many enterprises of Goskomsel'khoztekhnika are not observing the schedules for carrying out the requests for the restoration of units and assemblies. A requirement exists here for a wide assortment of restored parts. Throughout the republic, approximately 80,000 grain combines and 60 percent of the harvesters have been returned to operations. The preparation of this equipment should be accelerated in all areas and the quality of the repair work raised. /Text/ /Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 14 Jul 82 p 1/ 7026

CSO: 1824/451

TILLING AND CROPPING TECHNOLOGY

USE OF CHEMICALS IN AGRICULTURE FOR FOOD PROGRAM DEVELOPMENT

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 7, Jul 82 pp 111-114

/Article by O. Sokolov, chief of a sub-department of USSR Gosplan: "The Role Played by the Use of Chemical Processes in Carrying Out the Food Program"/

/Text/ In carrying out the agrarian policies of the Communist Party, among the principal factors concerned with intensification and important role is played by the use of chemical processes in agriculture. The food program of the USSR for the period up to 1990, approved during the May (1982) Plenum of the CC CPSU, contained the following statement: "A most important condition for the successful implementation of the food program of the USSR is an acceleration in scientific-technical progress, the highly efficient utilization of production potential and strengthening of the logistical base for agriculture and all branches of the agroindustrial complex based upon further development of mechanization, the use of chemical processes in production operations and extensive land reclamation work"[*].

The use of chemical processes in agriculture in our country is developing at a rapid tempo. During the period following the March (1965) Plenum of the CC CPSU and up until 1980, the deliveries of mineral fertilizers to agriculture increased from 6.3 million tons of nutrients to 18.8 million tons (an increase of 3.3 times), chemical feed additives for livestock production -- from 16,000 to 520,000 tons (an increase of 32 times), lime materials -- from 10 million to 36.9 million tons (an increase of 3.7 times) and chemical plant protective agents -- from 350,000 to 658,000 tons (an increase of 1.9 times), including herbicides -- from 51,000 tons of conventional units to 228,000 tons (an increase of 4.5 times). During this time the applications of organic fertilizers increased from 364 million to 803 million tons (an increase of 2.2 times).

In 1980, 76 kilograms of nutrients were applied with mineral fertilizers per hectare of sowing in our country, including for grain crops -- 51, corn for grain -- 215, cotton -- 417, sugar beets -- 438, spinning flax -- 190, sunflowers -- 59, vegetable crops -- 294, potatoes -- 274 and for forage crops -- 63 kilograms. In addition, 3.9 tons of mineral fertilizers were applied on the average for all crops per hectare, including for grain crops -- 2.1, cotton -- 7.5, sugar beets -- 20, vegetable -- 22.8, potatoes -- 46.1 and for forage crops -- 3.7 tons.

An analysis of the use of mineral fertilizers, carried out by the USSR Ministry of Agriculture, reveals that during the 1976-1980 period alone an average of 32.2

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[*] PRAVDA, 1982, 27 May.

million additional tons of grain were produced annually throughout the country as a result of the use of fertilizers, 3.3 million tons of raw cotton, 26 million tons of sugar beets, 9 million tons of potatoes, 5.5 million tons of vegetables, 120,000 tons of flax fibre, 600,000 tons of sunflower seed and many other products of field crop husbandry.

It should be noted that whereas during the initial period in the extensive development of the use of chemical processes in our country the principal increase in the deliveries of mineral fertilizers was aimed at raising the cropping power of technical crops, during the past five-year period an increase has taken place in the use of fertilizers for crops associated with the production of food products. During the last decade, the use of chemical processes has promoted an increase in the cropping power of grain crops from 13.7 to 16 quintals per hectare, cotton -- from 24.1 to 29.4, sugar beets -- from 228 to 236 and potatoes -- from 105 to 136 quintals per hectare. The cropping power and gross yields for forage crops have been raised considerably.

During the 1976-1980 period, on the average for the country as a whole, the increase in mineral fertilizer applications in behalf of grain crops, per ton of nutrients, produced an increase of 4.9 tons in the production of grain. In Kazakhstan it amounted to 6.1 tons, in Chelyabinskaya and Orenburgskaya Oblasts -- 14-15, in oblasts in the Volga region -- 6.4, in the north Caucasus -- 5.8, in the central chernozem region of the RSFSR -- 5.8 and in the Ukrainian SSR -- 6 tons. During this same period, each ton of fertilizer nutrients produced an increase of 2.7 tons in the production of raw cotton, sugar beets -- 15 tons, flax fibre -- 480 kilograms, sunflower seed -- 2.5 tons, potatoes -- 10 tons and vegetable-melon crops -- 13 tons. On the whole, the increase in fertilizer deliveries during the Tenth Five-Year Plan produced an increase in the gross output of field crop husbandry valued at 9.6 billion rubles. Moreover, the profit from the use of fertilizers in agriculture amounted to 5.2 billion rubles; the following profits were realized per ruble of fertilizer expenditure: for grain crops -- 0.88 rubles, cotton -- 1.86, sugar beets -- 0.57, flax-fibre -- 1.2, potatoes -- 2.75, vegetable-melon crops -- 2.16 rubles and the average for all crops -- 1.17 rubles.

The greatest return is realized from fertilizers applied in behalf of grain and forage crops. At the same time, mineral fertilizers are not being employed sufficiently effectively in a number of regions throughout the country and in individual union republics. For example, in the central region of the RSFSR the increase in grain per ton of fertilizer amounted to 2.7 tons and in the northwestern region -- only 1.6 tons, that is, 61 and 36 percent of the normative reimbursement. The normative reimbursement for fertilizers was considerably lower in the Latvian SSR -- 55 percent, Turkmen SSR -- 73 and the Lithuanian SSR -- 77 percent. The average reimbursement from fertilizers for grain crops throughout the country was higher than the norm by 11 percent.

The use of chemical feed additives in livestock production is extremely effective. Numerous scientific studies have shown that 1 ton of carbamide in nutrient balanced rations makes it possible to obtain 10 tons of milk in dairy cattle husbandry and during the raising and fattening of large-horned cattle -- 2 tons of increase and sheep -- 1.5 tons of increase in live bulk and 120 kilograms of scoured wool. Moreover, feed consumption per unit of output is decreasing by 10-15 percent. The use of 1 ton of feed phosphates ensures an increase in milk yield of 7-10 tons or a weight increase in livestock of 1 ton.

The following data testifies to the effectiveness of the use of chemical processes and their importance with regard to solving the food program. During the past five-year plan, in the overall volume of production capital investments for the agro-industrial complex, including the chemical industry and agricultural machine building, the expenditures for the use of chemical processes in agriculture amounted to 8.4 percent. In the process, the use of chemical processes provides a 50 percent increase in the production of farming products.

For the successful solving of the problems associated with the use of chemical processes in agriculture in our country and also CEMA member countries, importance is attached to the intensification and development of economic collaboration and integration. The coordination of the efforts of these countries, the specialization of their farms and mutual assistance in the production of individual types of products and the exchanging of technologies, equipment, raw materials and finished products are producing fine results.

The plans for the food program of the USSR up to the year 1990 call for the further development of such relationships.

For the Twelfth Five-Year Plan, the program calls for great tasks to be carried out by USSR agriculture. The average annual production of grain must be raised to 250-255 million tons, meat -- to 20-20.5 million tons, milk -- to 104-106 million tons, eggs -- to 78-79 billion, vegetables -- to 37-39 million tons and fruit and berries -- to 14-15 million tons.

During the Eleventh and Twelfth Five-Year Plans, just as in the past, the use of chemical processes in agriculture will be carried out at a rapid tempo. The food program calls for agriculture to be supplied with the following: mineral fertilizers -- in 1985 in the amount of 26.5 million tons and in 1990 30-32 million tons of nutrients; chemical feed additives -- 950,000 and 1.2 million tons respectively; chemical plant protective agents -- in 1985 up to 680,000 and in 1990 up to 750,000-790,000 tons.

Measures have been defined for raising the quality of the mineral fertilizers. The plans call for measures aimed at supplying agriculture with lime materials. The production of feed preservatives is being increased: in 1985 no less than 110,000 tons will be supplied and in 1990 -- 380,000-400,000 tons. The plans call for the use of organic fertilizers to be increased to 1.2 billion tons in 1985 and to 1.5 billion tons in 1990, the extraction of peat for composts and litter for livestock in 1990 -- to 170 million tons annually.

Increases will also take place in the production of biological agents for protecting plants, in plant growth regulators, in gypsum-containing materials, in plastic and in other chemical means.

A chief trend in the use of chemical processes during the Eleventh and Twelfth Five-Year Plans will be that of achieving a maximum reduction in losses in chemical resources, raising the effectiveness of their use and searching for and mobilizing all available reserves. A great deal has already been accomplished in our country towards this end. A single specialized agrochemical service was created in 1979. Farm and inter-farm stations for the use of chemical processes are being placed in operation at kolkhozes and sovkhozes. The agrochemical service has been assigned complete responsibility for the effective and scientifically sound use of mineral and organic fertilizers, chemical and biological plant protective agents, ameliorants, feed additives, plant growth regulators, polymer materials and other chemical resources.

For carrying out the assigned tasks, the agrochemical service has approximately 100,000 tractors, more than 100,000 motor vehicles and many items of specialized equipment. The plans for the Eleventh and Twelfth Five-Year Plans call for an extensive construction program, at enterprises of Sel'khozkhimiya and at sovkhozes, of mechanized warehouses for the storage of chemical resources; the installation of manure pits, flight take-off and landing strips, containers for liquid forms of fertilizers and feed preservatives; the creation of stations for the technical servicing of equipment and also farm and inter-farm stations for the use of chemical processes. The plans call for an increase in the volumes of peat to be procured and other local materials and an increase in the deliveries of the equipment required for this type of work. In addition, a complex of measures is planned for creating the conditions required for more rational utilization of chemical resources in farming and livestock production.

However the specialists attached to kolkhozes, sovkhozes and the agrochemical service will play a decisive role in the effective use of the chemical products made available to agriculture.

A principal task of the specialists attached to Sel'khozkhimiya subunits is that of efficiently organizing the work of carrying out the plans for fertilizer deliveries to the farms. Regular and timely deliveries serve to guarantee that they will be utilized properly. All measures must be undertaken aimed at preventing losses in the chemical materials at bases, during deliveries to the farms and during direct applications to the soil. Irregular applications of fertilizers and chemical ameliorants to the soil lead to great shortfalls in output. Thus the specialists attached to farms and the agrochemical service must organize the work of inspecting and adjusting the equipment used for this work. The majority of the republics and oblasts have reserves at their disposal for making the best use of organic and other local fertilizers.

A number of republics and oblasts are systematically failing to fulfill their plans for the procurement and use of peat. Work is slowly unfolding in connection with the gypsuming of saline soils and the use of defecate obtained from sugar plants. Last year the organizations of Sel'khozkhimiya did a very poor job of organizing the shipments of fertilizers and gypsum containing materials and lime directly from the plants by means of motor transport. During the winter greater opportunities are available for using not only one's own transport equipment but also motor vehicles brought in from other areas for the carrying out of this work.

Special attention must be given to the quality of the work being carried out and particularly to the quality of the organic fertilizers being procured and placed in use. Unfortunately, everything is not proceeding will in this area. The use of peat in pure form is continuing; the organic fertilizers are being shipped and stored out on the fields in an irrational manner and in small piles and they are being distributed on the fields in an irregular fashion. This is resulting in great nutrient losses.

The construction of manure pits and warehouses for the storage of chemical resources is being carried out in a very unsatisfactory manner. From year to year, the plans for the construction of these facilities are not being carried out in many oblasts and rayons. For the country as a whole, the plan for the Tenth Five-Year Plan for the construction of warehouses for the storage of mineral fertilizers at sovkhozes was fulfilled by only 70 percent and at enterprises of Sel'khozkhimiya -- by 60 percent.

Many opportunities for the more rational utilization of chemical resources are to be found directly at the kolkhozes and sovkhozes. Extensive production experience has shown that in those areas where centers and stations for the use of chemical processes have been created and are in use, the effectiveness of use of chemical resources is considerably higher. Much is dependent upon the overall level of the culture of farming on the farms, the use of efficient methods for applying fertilizers to the soil, the introduction of new and highly productive varieties and progressive technologies for the cultivation of agricultural crops and upon the use of biological methods for protecting plants, plant growth regulators, microfertilizers and other achievements of science and leading experience.

The majority of the planning and research stations for the use of chemical processes in agriculture are currently analyzing the actual effectiveness of use of fertilizers under production conditions at kolkhozes and sovkhozes. Ideally, we are of the opinion that such an analysis should be conducted for each oblast, rayon and farm. Based upon the data obtained from such analysis, the fertilizers should be distributed and used in behalf of those crops and sent to primarily to those farms where the return from their use is the greatest. This will serve as an important lever for raising the effectiveness of the fertilizers. At the same time, analysis will aid the specialists in establishing the reasons for insufficient effectiveness in the use of chemical resources and finding methods for eliminating them.

The data obtained from the above analysis is being used by USSR Gosplan for the development of draft plans. Thus, in preparing the plan for the current five-year plan, it was stipulated that more than 80 percent of the increase in fertilizer deliveries was to be used for grain and forage crops. In conformity with the food program and compared to 1980, the deliveries of mineral fertilizers during 1985 in behalf of grain crops will be increased by a factor of 1.7 and in 1990 -- by twofold. Moreover, the increase in fertilizer resources will take place mainly in those zones which provide the greatest increase in the yields of commodity grain. The plans also call for the sowings of sunflowers and soybeans and vineyard plantings to be provided with more ample amounts of fertilizer. The industrial enterprises have great opportunities at their disposal for placing in operation reserves for increasing the deliveries of mineral fertilizers.

Thus it is known that in many instances, during the course of primary and secondary enrichment of phosphorites (leaching, crushing, milling, flotation and so forth), up to 30-40 percent of the ore is lost. Up to 6-8 percent of the phosphates are lost during flotation enrichment of apatite-nepheline ores from Khibinskiy deposits. During the processing of natural phosphates into phosphoric acid or concentrated fertilizers, up to 5-6 percent of the phosphorus is lost. During the extraction and enrichment of potassium salts, the losses sometimes reach 30-40 percent.

Improvements in the technologies for flotation and for the processing of raw materials will make it possible to increase the production volumes for these valuable fertilizers.

In the production of synthetic alcohol at the Saratov Nitron Association, the Kuybyshev and Ufa synthetic alcohol plants and at the Groznyy Chemical Plant imeni 50-Letiya SSSR, up to 14-15 percent of the phosphorus assimilated by the plants and processed by a silica gel catalyzer is discharged into the refuse heap. If use were made of these waste materials, agriculture would be supplied with more than 4,000 additional tons of phosphorus containing fertilizers annually.

Waste products from the biological purification of sewage waters can be obtained from hydrolysis and cellulose plants. For a moisture content of 60 percent, each ton of hydrolytic sludge contains approximately 14 kilograms of nitrogen, 1 kilogram of potassium and 8 kilograms of phosphorus. The experimental use of such sludge in agriculture raises its high effectiveness when applied in behalf of agricultural crops.

The aluminum industry possesses considerable potential for increasing the production for agriculture of valuable non-chloride potassium fertilizers and the chemical industry -- phosphorus fertilizers.

In our country the natural level for supplies of phosphorus in the soil is very low. According to data obtained from an agrochemical study carried out in 1980, 79 percent of the country's arable land lacked sufficient forms of phosphorus deemed accessible for the plants. And yet the agricultural crop yields are greatly dependent upon such forms being available. This is clearly apparent in the data for experiments summarized by the agrochemical service[*] and furnished in the following table.

Phosphorus Content in Soil, mg per 100 g of soil	Yield, quintals per hectare		
	Barley	Spinning Flax	Potatoes
Low (up to 5)	11.7	4.1	139
Average (5-10)	16.2	4.1	149
Raised (10-15)	26.0	5.4	165
High (15-20)	26.0	5.9	207

An increase in the deliveries of phosphorus fertilizers can raise considerably the effectiveness of use of all types of mineral fertilizers. Experiments carried out in the Belorussian SSR[**] testify to the fact that when the same dosages of mineral fertilizer are applied (160-180 kilograms per hectare for grain crops and 200-220 kilograms for potatoes) to soils having a raised degree of phosphorus, compared to those having a low degree, the effectiveness of the fertilizers increases by 33-56 percent. A phosphorus deficit affects the production of grain.

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[*] See: A.V. Postnikov. Development of the use of chemical processes in agriculture and some questions concerned with improving agrochemical services. Subjects of reports delivered during Second All-Russian Conference on the Use of Chemical Processes in Agriculture. Part I, Moscow, Minsel'khoz RSFSR, 1975 p 73.

[**] See: T.N. Kulakovskaya. "Use of Chemical Processes in Agriculture in the Western Region of the Nonchernozem Zone of the USSR." KHIMIYA V SEL'SKOM KHOZYAYSTVE /Chemistry in Agriculture/, 1978, No 2, p 6.

In 1981, grain crops were cultivated in our country with fertilizer applications on an area of 69.6 million hectares, that is, on 58 percent of the overall sowing area for grain crops. For the most part, grain crops were cultivated in the absence of mineral fertilizer applications in Kazakhstan, eastern and western Siberia, the Urals and in the Volga region. This was associated mainly with a shortage of phosphorus fertilizers.

According to the data obtained from numerous experiments carried out in agrochemical laboratories in the Kazakh SSR and in the eastern regions of the RSFSR, an application to the soil of 1 quintal of phosphorus fertilizers furnishes an average increase in yield of 4.5-5 quintals. Thus it is possible at the present time, using this means alone, to increase the gross yields of grain in the mentioned regions by 11-12 million tons and in the future, with optimization of the fertilizer dosages -- by 25-28 million tons (that is, the production of grain can be doubled).

We have adequate supplies of phosphate raw materials. Factors which are restraining their use include the absence of efficient technologies for processing the raw materials and a shortage of sulphur.

The influence exerted by workers in industrial branches on the rational use of chemical resources is quite substantial. It is associated mainly with fulfillment of the production plans for chemical products by each enterprise. However, there have been instances of the production plans not being carried out and of individual rayons and farms failing to be supplied with considerable quantities of chemical resources. Thus, for the country as a whole, the plan for mineral fertilizer deliveries was fulfilled by 94.2 percent in 1981. Agriculture was undersupplied with fertilizers in the amount of 1.18 million tons. The plan for deliveries of lime materials was fulfilled by 83 percent and specifically in the Lithuanian SSR -- by 85, Ukrainian SSR -- by 68 and the Georgian SSR -- by 54 percent. Workers in the chemical industry and the industry of construction materials must undertake all measures necessary for ensuring the complete use of existing capabilities for the production of mineral fertilizers and lime materials and they must also find the means for increasing their output.

Increased effectiveness in the use of chemical resources will be dependent upon successful solutions being found for many problems both by agricultural workers and workers attached to interested branches of industry. Their joint efforts in this regard will promote the realization of our country's food program.

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TILLING AND CROPPING TECHNOLOGY

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SORGHUM PRODUCTION IN DRY AREAS OF ROSTOVSKAYA OBLAST

Krasnodar SEL'SKIYE ZORI in Russian No 2, Feb 82 pp 20-21

[Article by V. Cheproukha, first secretary of the Proletarskiy CPSU Raykom in Rostovskaya Oblast: "In the Arid Zone of the Don"]

[Text] The area of irrigated land in our rayon is expanding at rapid rates. Under the Tenth Five-Year Plan it increased by 3,500 hectares. By 1985 the restored land will occupy up to 34,700 hectares. Farmers are exerting all efforts in order to provide for highly effective utilization of irrigated land. A good deal of attention is being devoted to improving the structure of the planted areas and selecting the most productive crops.

One of these crops is grain sorghum whose potential productivity is greater than that of other forage crops. The soil and climate conditions of the rayon, like those of the entire eastern zone of the oblast, make it possible to raise fairly stable yields of grain sorghum with irrigation. But many questions of its cultivation on soil such as ours (chestnut in combination with solonets) have still not been well studied. Before the beginning of our research, which we have conducted since 1974 under the leadership of the chief of the laboratory for selection and seed growing of corn and sorghum of the Don selection center, doctor of agricultural sciences Ya. I. Isakov, on the Leninskiy Put' Kolkhoz, there were no regionalized strains of grain sorghum. Therefore we devoted our major attention to studying the productivity of new strains and hybrids of it and selecting the ones that were the most suitable for local conditions.

In the experiments we studied the relative productivity of strains and hybrids of grain sorghum from the selection work of the Don selection center and the regionalized hybrids of corn, Krasnodarskiy-440 and Orbita. In the beginning we used corn hybrids as a standard, and since 1976, also the Skorospeloye-89 strain of sorghum which has been regionalized in the eastern zone of Rostovskaya Oblast.

Basic and preplanting cultivation of the soil is done according to recommendations for cultivating corn and sorghum in the Don area. When planting corn the distance between the rows was 70 centimeters and sorghum--15 centimeters, which made it possible to have 60,000 corn plants and 95,100 sorghum plants per hectare by harvest time. The planted areas were irrigated with DDA-100M sprinkling aggregates (norm--500 cubic meters per hectare) during the tillering stage and before tasseling. The crops were harvested with grain combines.

In terms of weather conditions the most favorable years for the growth and development of corn and sorghum were 1977-1978 and the least favorable were 1975-1976.

In our research we paid attention to the fact that the growth processes of these crops take place in different ways. Corn grows especially intensively during the first period. Its greatest average daily growth of 3.7-3.8 centimeters was observed during 4-15 July, while the greatest growth of sorghum, 3.4-4.5 centimeters, came from 25 July to 4 August. By the end of the growing period the corn had grown 180-200 centimeters and the sorghum had grown 100-120 centimeters.

On an average for four years the grain yield of Skorospeloye-89 sorghum surpassed that of the Krasnodarskiy-440 corn hybrid by 9.3 quintals per hectare and Orbita, by 9.7 quintals per hectare. Khazine-1 sorghum produced 22.6-22.9 quintals more grain than these hybrids did.

The duration of the growing period and the bushiness and height of the plants affect the productivity of strains and hybrids of grain sorghum. As our experiments showed, the lowest growing plants were Skorospeloye-65 (average height, 95 centimeters), Khazine-23 (100 centimeters) and Khazine-33 (100 centimeters).

Their growing period lasts 108-116 days and is essentially the same as that of the regionalized strain Skorospeloye-89 and Khazine-4, but their productivity is greater than that of the standard (see table).

Table. Characteristics and Productivity of New Strains and Hybrids of Grain Sorghum

Strain, hybrid	Grain yield, quintals per hectare 1975	1976	1977	1978	4-year average	Additional yield
Skorospeloye-89 (standard)	40.2	55.0	64.0	63.4	55.6	---
Skorospelove-65	47.1	57.2	68.1	69.2	60.4	4.8
Khazine-4	48.2	56.9	70.5	69.4	61.2	5.6
Khazine-23	50.5	60.2	73.1	73.5	64.4	8.8
Khazine-33	51.4	61.3	74.2	74.2	65.3	9.7
Khazine-1	64.5	67.6	72.1	71.2	68.8	13.2
Hybrids:						
Nizkorosloye krasnoye MS X Skorospeloye 89	47.2	63.5	75.6	77.8	63.5	7.9
Nizkorosloye krasnoye MS X Khazine-4	53.5	66.7	77.4	78.5	68.9	13.3
Nizkorosloye krasnoye MS X Khazine-23	56.5	68.9	79.1	80.2	71.2	15.6

On irrigated land the early and medium early ripening strains of grain sorghum form fairly large yields of grain, regardless of the weather conditons. As for the hybrids, their productivity decreases sharply with unfavorable weather. This was observed even with highly productive hybrid combinations (Nizkorosloye krasnoye MS X Khazine-4 and Nizkorosloye krasnoye MS X Khazine-23) which it makes it impossible to recommend them for cultivation for grain in the extremely arid eastern zone of Rostovskaya Oblast. We are now conducting state strain testing on strains of grain sorghum that have isolated with our participation--Skorospeloye-65, Khazine-23 and Khazine-33. The Khazine-23 strain has been recommended for reduced plantings on farms of our zone by the Stavropol' Agricultural Institute.

The new strains are of undoubted interest. They have a favorable combination of important economic indicators: shortness of stalk, resistance to lodging, great productivity of the tassel, and an advantageous ratio between grain and green mass. Because of their shortness it is possible to harvest the plant by direct combining with grain combines. And another advantage: they use much less water and nutritive substances to form the stalk and thus they meet the requirements of modern farming more fully.

Relying on the research that has been conducted and the experience of the leading collectives of the rayon, our field workers are expanding the areas planted in sorghum crops and learning how to obtain large, stable yields of grain and green mass as well as to utilize them for strengthening the feed base for animal husbandry. Last year we allotted 1,000 hectares for sorghum and 5,000 hectares for silage. The combined plantings of sorghum and corn were increased by 12,000 hectares and those of sorghum and sudan hybrids for green feed--by 6,000 hectares. During this critically dry year the kolkhozes and sovkhozes managed to harvest 130-170 quintals of green mass of sorghum and sorghum-sudan hybrids from non-irrigated fields and 185-247 quintals from irrigated fields. At the same time corn produced 50-87 quintals without irrigation and 165-205 quintals with irrigation.

All this has convinced all of us once again how important sorghum crops are as a reserve for increasing the production of feeds. This year the farms of the rayon will cultivate it on 1,000 hectares. The farmers are striving to obtain 35 quintals of forage grain per hectare and 335-420 quintals of green mass.

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CARE FOR THINNED STANDS OF WINTER GRAIN IN KRASNODARSKIY KRAY

Dranodar SEL'SKIYE ZORI in Russian No 3, Mar 82 p 11

[Article by V. Tereshchenko, assistant at the Kuban' Agricultural Institute: "On Thinned Plant Stands"]

[Text] In the northern zone of Krasnodarskiy Kray the weather conditions are frequently unfavorable for the growth and development of winter wheat. During the autumn and winter the plants on considerable areas thin out or completely perish. In the spring it is necessary to plant over them or replant them with grain crops, most often spring barley. During the past ten years such additional work was done on an average of one-fourth of the winter crops in this zone.

Beginning in 1976, the general farming department of the Kuban' Agricultural Institute has been conducting work on the Kuban' Kolkhoz in Novopokrovskiy Rayon. The goal is to develop recommendations for production using efficient devices for planting over and replanting fields of winter wheat that have become thin. The material that has been accumulated is of practical interest for all farmers of the Northern Caucasus.

In the experiments with undersowing two norms for planting seeds were tested. In the first case, after determining the actual density of the planted areas after wintering, the average number of plants of spike crops on the fields were increased to the optimal indicator under local conditions (450-500 plants per square meter). In the second variant we used the full norm of seeds that is usual for the spring (clean) planting of barley (5.0 million per hectare). The same norm was used for replanting winter wheat after preliminary cultivation of the fields to a depth of 8-10 centimeters. Krasnodarskaya-46 winter wheat was undersown with Temp spring barley or Zavet-3 winter barley.

On sections of winter wheat where in the spring there were 135-150 untillered plants per square meter, it turned out to be most effective to undersew them with spring barley with the full norm of seeds. This provided (on an average for three years) an increase in the yield of grain per hectare of 9.4 quintals, with the yield in the control group (without undersewing) being 15.5 quintals.

When the density of the stand of winter wheat plants after wintering was 181-196 per square meter, the best result--25 quintals per hectare was achieved with undersewing with spring barley to the optimal density. The additional yield as compared to the control group was 7 quintals per hectare. Undersowing of winter crops turned out to be inexpedient when the density of the plant stand was 242-255 and more.

Thus when thinned wheat was replanted after preliminary cultivation of the fields the yield was less than with undersowing with barley, when both a full and a reduced norm of seeds were used. Zavet-3 winter barley, when undersown on areas planted in wheat, had no advantages over spring barley.

Undersowing spring barley on areas planted in wheat that had tillered in autumn guaranteed an additional yield, as a rule, only when the thinning was significant. Thus on an average for 1979-1980 on winter wheat with low density (57-77 plants per square meter) with two stalks per plant, the maximum additional yield of grain per hectare (8.5 quintals) was produced by undersowing with barley in the full planting norm; the yield on the section without undersowing (control) was 16 quintals per hectare. On a field where in the spring of 1978 and 1980 there were 104-113 wheat plants per hectare (tillering--1.8), the greatest yield of grain--29.7 quintals--was obtained when the field was undersown with winter barley to the optimal density. The additional yield over the control data amounted to 7.1 quintals here. When undersowing winter wheat with a spring density of the stand of 135-152 plants (tillering--1.6-1.8) there was no additional yield of grain.

Experiments showed that in the northern zone of the Kuban' which has inadequate moisture, spring wheat in the phase of 1-3 leaves with 180-230 viable plants per square meter should be undersown with spring barley to the optimal density. With a lesser density it is expedient to apply the full planting norm.

On thickened sections where the winter wheat has tillered in autumn (1.6-2.0 stalks per plant) with a density of the stand of no less than 80 plants per square meter, it is necessary to undersow with the full norm of seeds. It is better to undersow wheat with a density of the stand of 100-120 plants with spring barley to the optimal density under local conditions (450-500 plants per square meter).

In all cases undersowing should be done at the earliest possible time. It is necessary to take into account the fact that some of the wheat plants that have gone through the winter (15-25 percent) die with undersowing because of damage done by the caterpillar tractors and the disks of the seeders. And there are 5-7 percent fewer barley shoots than when the areas are replanted after cultivation. Therefore the norm of seeds of spring barley when undersowing to the optimal density of the plants should be approximately 60-80 percent of the norm that is used when planting on clean fields.

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